TEXTILE TECHNOLOGY DIGEST

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Foreign Patents

Information supplied by the Scientific Library of the US Patent Office is presented here for the convenience of readers who may have occasion to consult foreign patents. Photocopies of patents from any nation in the list can be obtained from the Patent Office in Washington. The list shows the latest patents received by exchange.

It is the custom of the Scientific Library to file two sets of the printed patents of each foreign nation, one set numerically and one in the order of the official classification. The U. S., British and French classifications have not been widely copied, but the German classification is popular among the smaller European nations.

Belgium, Canada and Russia do not appear in this list. Belgian and Canadian patents are not printed; manuscript copies (usually photoprints) are obtained from the respective patent offices at a fixed cost per page of specifications and drawings. Russian patents are printed, but exchange of copies between the US and Russian patent offices has not yet been established.

Italy is a late comer in the matter of printing patents, and was still far short of catching up on the printing program when the last printed Italian patents came to Washington in 1941. A reference to an Italian patent is therefore no guarantee that a printed copy can be had.

The German Patent Office is presumably now being operated by the four-power commission which was in process of organization last September. The date for resumption of German patent grants for inventions is probably far distant. The Austrian Patent Office, which was made a branch of the German office after the Anschluss, is once more functioning independently.

The latest list of patents received by the US Patent Office is correct up to April 29, 1946. In a few cases, notably France, the set is not complete up to the highest patent number received; there are some gaps in recent consignments. Most nations, however, have kept the exchange complete as far as it has gone.

LATEST RECEIPTS OF FOREIGN PATENTS TO APRIL 29, 1946, SCIENTIFIC LIBRARY, US PATENT OFFICE

		Latest Patents Received	
Country	*Patent Office Functioning?*	*Date Rec'd*	*Highest No.*
Australia	Yes	1/25/46	120 483
Austria	Yes	1/23/46	160 920
Czechoslovakia	Probably	3/27/40	66 500
Denmark	No	9/3/40	57 582
France	Yes	8/24/45	866 200
	scattered copies up to		889 648
France, Additions		8/24/45	51 150
Germany	No	8/5/41	707 172
Great Britain	Yes (no abridgments yet) (class subscriptions for specifications are accepted)	4/29/46	574 800
Hungary	Yes	7/7/42	128 400
India	Yes	1/8/46	32 414
Italy	No	8/22/41	382 000
Japan	No	8/4/41	141 060
Netherlands	Yes	4/29/46	57 144
Norway	Yes	4/29/46	70 105
Poland	Perhaps (no relations as yet)	8/30/39	28 270
Sweden	Yes	4/29/46	116 766
Switzerland	Yes, but no recent receipts	12/26/42	220 062

Abstracts

[Where initials appear after an abstract, it has been written by a member of the Institute's scientific staff; where not so identified, it has been written by the editorial staff. The participation of the members of the scientific staff in abstract work is helpful both to the editorial office and to the reviewers themselves.]

ORGANIC FIBERS I

CLOTH QUALITY. Higher quality cloth in recent years. Anon. *Am. Wool Cotton Reptr. 60,* No. 7, 45, 47, 49, 51 (Feb. 14, 1946).

Continued improvements in quality of fabrics of all kinds, particularly as regards yarn regularity, are due to more knowledge, technical advances, and consumer interest. TTD:5-46.

FIBERS. Toward the stars with fibers. Anon. *Fibres 7,* 27-9 (Feb. 1946).

A brief general survey includes zein fibers, flax and hemp (and their histories), flax tow for heat insula-

tion, and a German substitute colloid (ultra-amylopectin). TTD:5-46.

CHEMURGY AND MODERN TEXTILES. Frederick Bonnet, Chemurgic Papers Series 3, No. 456, Nat'l. Farm Chemurgic Council, Columbus, O.; 1946; 7 pp. TTD:5-46.

Vegetable fibers — I 1

BALLING. A. J. Stalker (to Textile Appliances, Ltd.). Brit. P. 572 320. *Textile Mfr. 72,* 81a (Feb. 1946).

A roll-forming or balling machine has an improved means of removing balls of flax, hemp, jute, etc., through retractable side plates. TTD:5-46.

Cotton — I 1 a

COTTON. II—Production and characteristics of world's cotton crops. 2. Egypt. E. Lord. Brit. Cotton Industry Research Ass'n. *Shirley Inst. Memoirs 20,* 21-65 (Feb. 1946).

A comprehensive study of Egyptian cotton considers its history and economic geography, its varieties and diseases, and the grade and staple. The economic factors governing its development, present and future, are discussed; and the government institutions concerned with production are described as to their functions. TTD:5-46.

COTTON PICKER. Forty acres. Anon. *Ind. Bull. A. D. Little, Inc.* No. 218 (Feb. 1946).

Mechanical cultivation and picking of cotton are discussed. TTD:5-46.

STATIC IN COTTON. Static no joke in cotton. Anon. *Mid-South Cotton News 23,* No. 15, 1 (Feb. 1946).

A fine mist of water and sulfonated oil, which seems to eliminate static electricity during ginning, may result in improved spinning qualities. TTD:5-46.

COTTON GINNING EQUIPMENT AND ITS UTILIZATION IN SOUTH CAROLINA. Jas. M. Stepp. Bull. 362, Agricultural Expt. Station, Clemson, S. C.; 1945; 43 pp. TTD:5-46.

COTTON MAGIC. Mildred G. Barnwell, Jacobs Press, Clinton, S. C., 1945; 114 pp.; price $2.00.

Reviewed in *Textile World 96,* No. 3, 174 (Mar. 1946). TTD:5-46.

Flax — I 1 b

LINEN INDUSTRY. S. A. G. Caldwell. *Textile Weekly 37,* 332, 334, 336 (Feb. 15, 1946).

A survey of the industry considers the transition from a wartime to a peacetime basis. TTD:5-46.

Minor fibers — I 1 c

KAPOK and its substitute Bubblfil. C. S. Jones. *Indian Textile J. 56,* 436-8 (Feb. 1946).

DuPont's Bubblfil, developed as a substitute for Kapok when supplies of this natural product were cut off by the war, is a viscose product which has a number of uses besides those of heat and insulation. TTD:5-46.

PROBLEM OF RAMIE. S. A. G. Caldwell, *Dyer 95,* 165-6 (Feb. 15, 1946).

Uncertain supply and lack of an effective mechanical decorticator are important factors in hindering development of ramie. Several degumming processes are discussed. TTD:5-46.

RAMIE. Future of ramie fiber is reviewed by expert. Frank M. MacFall. *Cotton Trade J. 26,* No. 9, 3 (Feb. 23, 1946).

Ramie does not threaten cotton, but a combination of the 2 is suggested to meet competition from synthetics. TTD:5-46.

COMPARATIVE STUDY OF KAPOK. D. A. Clibbens. Imperial Inst. Bull. No. 43; 1945.

Reviewed in *Fibres 7,* 44-5 (Feb. 1946). TTD:5-46.

Bast fibers — I 1 d

JUTE. Progress of Indian jute research. Anon. *Jute & Canvas Rev. 17,* No. 210, 5 (Mar.-Apr. 1946).

The Indian Central Jute Committee's annual report discussed yarn tests, length and breaking load, yarn strength and humidity, woolenized jute, and bleaching with sodium chlorite. TTD:5-46.

JUTE in the chemical industry. W. G. Atkins. *Chemistry & Industry 1946,* 58-61 (Feb. 9, 1946).

The chemical processing of jute, its retting, batching, bleaching, dyeing and proofing, is surveyed in a lecture. TTD:5-46.

JUTE. Identification of jute varieties. Anon. *Fibres 7,* 39 (Feb. 1946).

Results of an investigation of the color range (from green to red) to be found in the jute plant which are contained in the Indian Central Jute Committee's Agricultural Research Memoir No. 3, offer a means of identifying varieties. TTD:5-46.

Animal fibers — I 2

SILK. Natural history of silk. Eric Hardy. *Indian Textile J. 56,* 441-3 (Feb. 1946).

A brief historical note on sericulture. TTD:5-46.

WOOL. X-ray interpretation of wool. W. T. Astbury, Leeds Univ. *Textile Recorder 63,* No. 754, 44-6, 67, No. 755, 53, 63 (Jan., Feb. 1946).

A lecture. X-ray analysis of wool reveals that its long range elasticity is a property of the keratin molecules. Unstretched and stretched wool give the 2 main keratin

diffraction patterns; to these 2 may be added a third, for steam treated keratin. Photographs of these 3 patterns are given. The x-ray studies of the fibrous proteins lead to the understanding of the structure of the crystalline proteins from which come the principles for producing artificial protein fibers (e. g. artificial wool). One of these artificial protein fibers (Ardil) is discussed. TTD:5-46.

WOOL. Some relationships between the constitution, properties and uses of wool. J. B. Speakman, Leeds Univ. *Textile Recorder 63,* No. 754, 47-9, No. 755, 49-52 (Jan., Feb., 1946).

A lecture. The wool fiber is examined through a study of the keratin molecule. It is concluded that the disulfide bond breakdown is the cause of unshrinkability in chlorinated wool. Cross linking reactions are considered to be important in developing new finishing processes for wool. TTD:5-46.

NATURAL WOOL AND ITS FUTURE. A. E. Lawson. Chemurgic Papers Series 2, No. 449; Nat'l. Farm Chemurgic Council, Columbus, O.; 1946; 3 pp. TTD:5-46.

Artificial fibers — I 3

ALGINATES. C. S. Jones. *Fibres, Fabrics & Cordage 13,* 62, 64-5 (Feb. 1946).

The ready solubility in weak alkaline solutions of alginate fibers is one of the limitations and at the same time one of the greatest recommendations. This solubility of alginates is utilized in a number of ways: as bonding or supporting agent for fancy yarns, as carrying or embossing agent for lace-like fabrics, etc. TTD:5-46.

ALGINATE THREADS. H. J. Hegan (To Courtaulds, Ltd.). Brit. P. 571 657. *Textile Mfr. 72,* 108 (Feb. 1946).

High quality alginate threads are produced by extruding alkali alginate into a metal salt bath to form an insoluble alginate. TTD:5-46.

ARTIFICIAL FILAMENTS. Robt. P. Roberts, Edgar B. Johnson & Michael A. Young (to Henry Dreyfus). Can. P. 433 860, Mar. 26, 1946.

Artificial filaments are produced by extruding (wt.%): 80-97 vinyl chloride, 20-3 vinyl acetate in a mixture of acetone and an aliphatic ether. TTD:5-46.

Cellulosic rayons — I 3 a

FIBRO facts for cotton users. Fletcher S. Culpepper, Am. Viscose Corp. *Am. Wool Cotton Reptr. 60,* No. 8, 9-10, 42-3 (Feb. 21, 1946); *Fibre & Fabric 99,* No. 3184, 6-8 (Feb. 9, 1946).

Handling of Fibro is discussed particularly as regards blends with cotton or wool. With wool blends it is found desirable to cut rayon staple somewhat shorter than the wool fiber; with cotton blends, on the other hand, it is preferable to have the cotton fibers shorter than the rayon. TTD:5-46.

RAYON. Developments in acetate rayon. Harold de-Witt Smith, A. M. Tenney Associates, Inc. *Rayon Textile Monthly 27,* 78-9 (Feb. 1946); *Am. Dyestuff Reptr. 35,* 71-2 (Feb. 11, 1946).

The extension of acetate rayon use depends on its distinctive properties, i. e. thermoplasticity, electrical resistivity, mildew resistance, and color fastness.
LWR TTD:5-46.

RAYON CORD finding permanent place in tires. *Anon. Textile World 96,* No. 2, 118-19, 202, 204 (Feb. 1946).

A brief review of rayon tire cord in the past decade. TTD:5-46.

VISCOSE RAYON. Developments in viscose rayon. F. Bonnet, Am. Viscose Corp. *Rayon Textile Monthly 27,* 76-8 (Feb. 1946); *Am. Dyestuff Reptr. 35,* 68-70 (Feb. 11, 1946).

The development of strong, tough, viscose yarns is held to be the most important single development in rayon production during the war years.
LWR TTD:5-46.

VISCOSE RAYON. Use of viscose rayon staple on the cotton system. F. S. Culpepper. *Rayon Textile Monthly 27,* 69-72; *Textile Colorist 68,* No. 3, 18, 53, Mar. 1946).

Rayon staple fiber can be spun on the cotton system of machines by suitable choice of denier size and by machine adjustments. The fiber may be used with or without a mixture of cotton. Changes necessary to adapt rayon staple fiber to the cotton system are suggested.
HAM TTD:5-46.

VISCOSE. Hayden B. Kline, Louis S. Fryer & Robt. D. McLaurin (to Industrial Rayon Corp.). USP 2 394 519, Feb. 5, 1946.

In the wet spinning of artificial thread, viscose is extruded into an acidic coagulating bath containing a sulfonated hydrocarbon and an emulsified petroleum oil. The oil forms a sludge with the impurities and separates from the coagulating liquid so that continued reuse of the liquid is possible without the formation of deposits on the spinnerets. TTD:5-46.

VISCOSE RAYON. Guy H. White (to Am. Enka Corp.). USP 2 394 957, Feb. 12, 1946.

In order to eliminate crusts formed in the second bath during the 2-bath method of spinning viscose yarn, an air stream is forced through the second bath agitating it to such an extent that by thus reducing the H_2S (to about 24 mg/liter) an excess of ZnS does not remain. TTD:5-46.

RAYON. Paul H. Schlosser, Jno. W. Bennett & Kenneth R. Gray (to Rayonier, Inc.). USP 2 395 015, Feb. 19, 1946.

In the cuprammonium process for manufacture of rayon, staple fiber, films, etc., an improved method of recovering reagents permits their reuse. By a preferred

method CuO recovered from the spinning bath and water-wash liquor is mixed with the acid wash in presence of H_2SO_4 which converts the Cu to $CuSO_4$.
TTD:5-46.

CELLULOSE ACETATE. Richard W. Nebel (to E. I. duPont de Nemours & Co.). USP 2 395 421, Feb. 26, 1946.

Cellulose acetate from wood pulp acylation, is washed in a bath (pH 4.5) containing combined H_2SO_4 (water hardness of 20 ppm, calculated as $CaCO_3$) to reduce solution viscosity. TTD:5-46.

VISCOSE RAYON SPINNING. L. Hensley (to Kirklees, Ltd.). Brit. P. 571 631. *Textile Mfr. 72,* 108 (Feb. 1946).

In order to maintain a high degree of humidity, required for viscose rayon spinning (to prevent formation of sodium sulfate crystals) a series of finely atomized sprays are arranged immediately adjacent to the viscose threads, the machine itself not being enclosed.
TTD:5-46.

CELLULOSE FIBERS. D. F. Holmes (to E. I. duPont de Nemours & Co.). Brit. P. 571 975. *Textile Mfr. 72,* 111 (Feb. 1946).

A process for modifying the properties of cellulose fibers comprises treating them with an isocyanate or an isothiocyanate. TTD:5-46.

WOOL-LIKE RAYON. Heberlein & Co. A.-G. Brit. P. 572 140. *Textile Mfr. 72,* 112 (Feb. 1946).

A wool-like rayon yarn (e. g. Rayolanda) is produced by imparting a high twist to the yarn (1500 turns per meter), treating with a swelling agent such as ZnCl, washing in dilute acetic acid, reverse twisting to about 80 turns per meter, and then winding loosely in hanks without tension. TTD:5-46.

VISCOSE. S. and M. Landa (to Bata A/G). Swed. P. Appl. 5197/1943. *Svensk Papperstidning 49,* 161 (Apr. 15, 1946).

Process for recovering useful components from spent coagulation baths obtained in the after-treatment of viscose filaments. TTD:5-46.

CELLULOSE DERIVATIVES. Swed. P. Appl. 4911/1944. *Svensk Papperstidning 49,* 83 (Feb. 28, 1946).

Process for making alkali cellulose with low moisture content. TTD:5-46.

RAYON. K. A. Lenning. Swed. P. 116 133, Jan. 21, 1943. *Svensk Papperstidning 49,* 180 (Apr. 30, 1946).

In making rayon, staple fiber or other artificial fibers, a periodical variation in diameter is imparted by vibrating the orifice. The vibration is composed of a basic tone and one or more overtones, the relation of which to the basic tone can be varied both in phase and in amplitude. TTD:5-46.

CELLULOSE ETHER RAYON. Texis Société Anonyme Textile. Swed. P. 116 134, Mar. 29, 1943. *Svensk Papperstidning 49,* 180 (Apr. 30, 1946).

In making artificial threads, filaments or films from alkali hydroxide solutions of cellulose ethers, the product first formed from the alkaline solution is dried in a preliminary stage, then treated at ordinary or elevated temperatures with a reagent which either dissolves free alkali hydroxide from the product or converts it to carbonate, thereby regenerating the cellulose ether in an insoluble form. TTD:5-46.

VISCOSE. Texis Société Anonyme Textile. Swed. P. 116 135, Mar. 29, 1943. *Svensk Papperstidning 49,* 180 (Apr. 30, 1946).

In making artificial filaments, films, or coatings from cellulose xanthate solutions or from xanthated cellulose derivatives, the xanthate product is first dried by exposure to a hot gas and then treated at ordinary or elevated temperatures with a reagent which either removes free alkali or converts it to carbonate.
TTD:5-46.

PRODUCTION OF CELLULOSE ACETATE: I. G. FARBENINDUSTRIE. Combined Intelligence Objectives Sub-Committee Report XXVI-75; price 7d.

Listed in *Govt. Publications (Great Britain)* (Feb. 1946). TTD:5-46.

VISCOSE STAPLE FIBER. Combined Intelligence Objectives Sub-Committee Report XXX-20; price 7d.

Listed in *Govt. Publications (Great Britain)* (Feb. 1946). TTD:5-46.

Protein fibers — I 3 b

SOYBEAN FIBERS. Toshiji Kajita & Ryohei Inoue. Vested in Alien Property Custodian. USP 2 394 308-9, Feb. 5, 1946.

An artificial protein fiber resembling silk or wool is produced from soybean by extracting the protein with a dilute alkaline solution, precipitating it with metal salts, stabilizing with sugar, maturing, and spinning in an acid coagulating bath. TTD:5-46.

PROGRESS OF RESEARCH ON CERTAIN SYNTHETIC PROTEIN FIBERS. H. P. Lundgren. Chemurgic Papers Series 2, No. 437; Nat'l. Farm Chemurgic Council, Columbus, O.; 1946; 2 pp.
TTD:5-46.

Synthetic fibers — I 4

NYLON HOSIERY. Suggestions for the manufacture of nylon seamless hosiery. Anon. *Rayon Textile Monthly 27,* 83 (Feb. 1946).

Brief practical suggestions are given.
LWR TTD:5-46.

VINYL RESIN TYPE. E. I. duPont de Nemours & Co. Brit. P. 571 826. *Textile Mfr. 72,* 110 (Feb. 1946).

Heat and water sensitivity of vinyl resin type fibers is reduced by treatment with a cross-linking composition. TTD:5-46.

Fiber applications **I 5**

FIBER BATTS. T. A. Unsworth. Brit. P. 572 200. *Textile Mfr. 72,* 112 (Feb. 1946).

Fiber batts (such as for cushions) are made on a machine having opposed sets of reciprocating needles which act to advance the batts. TTD:5-46.

RESINOUS FIBER SHEET. Philip H. Porter (to Can. Westinghouse Co., Ltd.). Can. P. 433 661, Mar. 19, 1946.

Finely divided resinous particles (a phenol-aldehyde resin with a protective glycinin protein film) is made adherent to a cellulosic fiber sheet. This fibrous material and resinous binder are suitable for molding. TTD:5-46.

INORGANIC FIBERS II

GLASS FIBER FLY-ROD. Resin bonded glass fiber fly-rod. Arthur M. Howald, Libbey-Owens-Ford Glass Co. *Modern Plastics 23,* No. 6, 124-5 (Feb. 1946).

A new type of fly-rod consists of a wood core, surfaced with resin bonded glass fibers. The 8 ft. 2-piece rod weighs 3½ oz. TTD:5-46.

CRIMPED FIBER. Stuart M. Dockerty (to Fiberglas Canada, Ltd.). Can. P. 433, 688, Mar. 19, 1946.

A crimped thin filament (e. g. glass fiber) is formed by directing an air stream against it as it is drawn across spaced bars. TTD:5-46.

ROCK WOOL, GEOLOGY AND TESTS. Wm. C. Morse & Thos. M. McCutcheon, Agricultural Exp. Station, State College, Miss. Bull. 62; 1945; 19 pp. TTD:5-46.

FIBER TO YARN III

Fiber preparation **III 1**

SPUN RAYON. Processing procedures for spun rayon yarns. Leslie L. Cobb, Tennessee Eastman Corp. *Cotton* (Atlanta) *109,* No. 11, 93-6, No. 12, 107-9, *110,* No. 1, 98-103, No. 2, 111-14 (Nov., Dec. 1945; Jan., Feb. 1946).

Problems encountered in conversion from cotton to rayon staple fiber in yarn manufacture are discussed as an aid to successful conversion and to operation with rayon staple. Blending, tinting for identification, and the picking process call for differences in operation as compared with cotton fiber. Most rayon staple is processed on revolving flat cards, although some is by roller cards (generally for coarse fibers). Production is about 12-14 lb/hr. In drawing, the trend is toward use of metal rolls instead of leather; 2 drawings should be used, as quality suffers with only one. Because of rayon's tendency to absorb grease very rapidly, great care should be used in oiling to see that there is no excess of oil. Cleanliness is important in all phases of processing, especially in drawing and roving. Spinning rayon staple depends upon fiber length and fineness, number of fibers in cross section of spun yarn, individual fiber strength, etc. The trend is toward 2 or 2.5 in. instead of 1.5 in. staple. Breaking strength of blends and strengths for counts may be calculated easily by refence to 2 tables. Care and cleanliness are important in warping. Humidity should be held to 55-60%. The layout for a 10,000 spindle mill is given in a table. TTD:5-46.

SLIVER CONDENSING. Jno. G. Kershaw & Harold Fisher (to Dominion Textile Co., Ltd.). Can. P. 433 552, Mar. 12, 1946.

A sliver condenser consists of a pair of coöperating tongue and groove calendering rolls through which the strands of fiber are fed. TTD:5-46.

SLIVER REINFORCING. Jas. R. McMillin & Stanley H. Lake (to Fiberglas Canada, Ltd.). Can. P. 433 558, Mar. 12, 1946.

A sliver of thermoplastic resinous material is reinforced by drawing through a glass fiber web so that the glass filaments become firmly interlaced with the fiber strands. TTD:5-46.

Breaking; opening **III 1 a**

OPENING. Eriez permanent magnet an important addition to the opening line. *Saco-Lowell Bull. 18,* No. 1, 19-23 (Mar. 1946).

A nonelectric permanent magnet (Eriez) for extracting tramp iron in opening and picker rooms reduces the possibility of fires (78% of which are said to be caused by this tramp iron in the cotton). TTD:5-46.

Carding **III 1 c**

CARD CLOTHING. History and manufacture of card fillet. E. B. Handley, English Card Clothing, Ltd. *Textile Weekly 37,* 234, 236, 238 (Feb. 1, 1946).

A lecture gives the historical background and some details of manufacture. TTD:5-46.

CARDING of knot yarns. Anon. *Wool Record & Textile World 69,* 295, 297-8 (Feb. 7, 1946).

Carded knot yarns are popular in production of tweeds. Practical suggestions for carding are given. TTD:5-46.

FLAX HACKLING. Efficiency in flax hackling. Flaxman. *Textile Recorder 63,* No. 754, 42-3 (Jan. 1946).

Care and attention to details in hackling will improve spinning quality of flax. Range of pin gradations is tabulated. TTD:5-46.

PREPARATION FOR COMBING. Anon. *Saco-Lowell Bull. 18,* No. 1, 1-12 (Mar. 1946).

A discussion in some detail of cotton combing includes besides a description of the process, photographs of the ribon lap and sliver lap machines, lap winder, 4- and 5-roll drawing frames, and 3 typical card sliver graphs. TTD:5-46.

SLIVER REDUCER—something new for the carding department. Editors. *Textile Bull. 69,* No. 12, 33-4 (Feb. 15, 1946).

In place of the calender roll on cards, a card sliver reducer, which is mounted on the card, eliminates the first drawing process, or possibly all drawing (depending on the fiber type) and increases card production 10-30%. Essential features of this attachment are described and illustrated. TTD:5-46.

CARD. Eugene C. Gwaltney & Herbert E. Child (to Saco-Lowell Shops). USP 2 396 571, Mar. 12, 1946.

A carding machine better adapted to carding mixtures of cotton with rayon and wool, flax, silk, etc., uses individual covers for worker and stripper rolls to reduce amount of lint and fly. These casings are about ¾" from the surface of the rollers, precise adjustment of which is relatively easy. TTD:5-46.

COMBING. G. W. & J. I. Nasmith (to District Bank, Ltd.). Brit. P. 571 733. *Textile Mfr. 72,* 109 (Feb. 1946).

A detaching roller drive for combing fibers is driven by a pivoted tooth sector which allows periodic movement. TTD:5-46.

CARDING MACHINE. T. H. Parker. Brit. P. 572 560. *Textile Mfr. 72,* 81a (Feb. 1946).

Flat driving on cards provides for alternate speeds: a relatively faster speed for setting and a somewhat slower speed for grinding. TTD:5-46.

Drawing III 1 d

DRAWING FRAME CLEARERS. W. J. Elliott (to South Mills, Ltd.). Brit. P. 572 062. *Textile Mfr. 72,* 111 (Feb. 1946).

A means of cleaning the clearers of drawing frames consists of a traveler that can be moved along the scraping edges of the clearer. TTD:5-46.

Spinning III 2

COTTON YARN irregularities and their causes. K. G. Lulla. *Indian Textile J. 56,* 445-8 (Feb. 1946).

Unevenness is not an inherent fault of cotton yarn but rather is to be traced to the various drafting processes subsequent to the card. An accompanying table shows roving twists for various staple lengths and sizes of roving. TTD:5-46.

LARGE PACKAGE SPINNING. Anon. *Wool Record & Textile World 62,* 357-8 (Feb. 14, 1946).

Worsted spinning in large packages is discussed with particular reference to 3 types of spinning frames: (1) the Magnum, (2) the Parawind, (3) the Velox, or mule ring frame. TTD:5-46.

RAYON. Running rayon on woolen system. J. T. Drennen & T. A. Boswell, Am. Viscose Corp. *Textile World 95,* No. 12, 100-1, *96,* No. 1, 100-1, 186, 188, 190, No. 2, 147, 149, 242, 246 (Dec. 1945; Jan., Feb. 1946).

Careful fiber selection is important in adapting rayon staple to the wool system. Tests indicate a dull 2.5" staple (5.5 den.) is best for 1.5-4 run yarns while for finer yarns than 4 run 2" staple (3 den.) is best. In picking and oiling rayon, oil used should form a stable emulsion with water, be easily removed in scouring, and not discolor stock in storage. Less carding is necessary for rayons than for wool. Variation in roving weight, however, is a problem not always easily solved. Specifications for a 3-card set for fiber blends are listed in 3 tables. TTD:5-46.

RAYON DENIERS. New additions in American rayon deniers and filament table. H. R. Mauersberger. *Rayon Textile Monthly 27, 76* (Mar. 1946).

A table shows additional high tenacity rayon deniers and filament numbers.
HAM TTD:5-46.

RAYON DENIERS. Table of deniers and filament numbers of American rayon yarns. H. R. Mauersberger. *Rayon Textile Monthly, 27, 77* (Mar. 1946).

A tabulation.
HAM TTD:5-46.

WOOLEN YARN DEFECTS resulting from poor carding and mule spinning practice. A. C. Robert. *Textile Age 10,* No. 1, 68, 70, 72-3, No. 2, 44, 47-8 (Jan., Feb. 1946).

Careful card setting reduces yarn defects. The mule spinning operation is divided into 11 different motions, each of which is described briefly. Equipping of the mules with clocks (for registering each draw) is suggested as a means of reducing careless computation and weight. TTD:5-46.

YARN TENSIONING. Herbert O. Naumann (to North Am. Rayon Corp.). USP 2 397 153, Mar. 26, 1946.

By means of a rotatable bonnet an adjustable tension is maintained on yarn as it is wound from a package through a rotary twisting spindle. TTD:5-46.

YARN DELIVERY. G. V. Wynne-Jones & H. N. Soper. Brit. P. 572 003. *Textile Mfr. 72,* 111 (Feb. 1946).

The flyer of a spindle which is mounted between automatically oiled bearings pays out yarn from a spool. TTD:5-46.

YARN TWISTING. U. S. Rubber Co. Brit. P. 572 026. *Textile Mfr. 72,* 111 (Feb. 1946).

A rotating device for twisting together a number of threads draws yarn from 2 yarn packages. TTD:5-46.

SPINNING MULES. J. S. Heaton (to Atherton Mills, Ltd.). Brit. P. 572 067. *Textile Mfr. 72,* 111-12 (Feb. 1946).

A spinning mule has an improved wiping down motion. TTD:5-46.

SPINNING TWO-FOLD YARN. R. Pollard (to E. Horsfall & Co., Ltd.). Brit. P. 572 244. *Textile Mfr. 72,* 112 (Feb. 1946).

An improved device for manufacturing 2-fold yarn spins yarn and twists it with a previously spun yarn in one operation. TTD:5-46.

SPINNING MOUNT. Chas. M. Neal (to Saco-Lowell Shops). Can. P. 433 841, Mar. 26, 1946.

A spinning and twister spindle has a rail and adjustable base with resilient cushioning between. TTD:5-46.

Winding III 3

WARPER. New all-metal high-speed warper. Anon. *Rayon Textile Monthly 27,* 158 (Mar. 1946).

Sipp-Eastwood's new all-metal warper is used on rayon and nylon yarns. A 4 speed range gives a slow start with automatic step-ups to 500 yds/min. TTD:5-46.

WARPING. Machines and processes in cotton and rayon mills. Anon. *Am. Wool Cotton Reptr. 60,* No. 9, 13, 15 (Feb. 28, 1946).

Various types of warping methods are briefly described. TTD:5-46.

YARN WINDING. Warp winding efficiencies and economies. S. A. G. Caldwell. *Textile Mfr. 72,* 94-5, 98 (Feb. 1946).

Various winding machines, particularly for jute and linen yarns, are considered. Improved starting and stopping mechanisms and self-threading devices are discussed. TTD:5-46.

YARN WINDER. Alvin Lodge (to Am. Viscose Corp.). USP 2 395 890-1, Mar. 5, 1946.

In packaging yarn on tubes, cones, etc., an automatic winder winds the waste tails and transfer tails of yarn at a spaced interval from each other. TTD:5-46.

WINDER. Edw. Kinsella (Brit. Celanese, Ltd.). USP 2 396 662, Mar. 19, 1946.

A yarn winder for artificial filaments automatically regulates the speed of the package to compensate for increase in package diameter. TTD:5-46.

WINDER. Alfred W. Arterton & Wm. W. McConnell (to Foster Machine Co.). Can. P. 433 409, Mar. 5, 1946.

An improved traverse mechanism for a yarn winder, comprising a pair of pivoted levers with a thread guide connected to one, produces a barrel-shaped package. TTD:5-46.

YARN WINDING. Hood Worthington (to Can. Industries, Ltd.). Can. P. 433 782, Mar. 26, 1946.

A traversing mechanism with spaced yarn guides winds a number of yarns side-by-side. TTD:5-46.

Yarn processing III 4

PRODUCTION OF CLEAN YARNS. Anon. *Wool Record & Textile World 69,* 298-300 (Feb. 7, 1946).

Small dirt spots, blemishes and minor defects in yarns are often to be traced to the negligence of operators. Systematic cleaning and checking for such faults are suggested. TTD:5-46.

RAYON YARNS. Practical effect of stretching rayon yarns. John E. Bell, Cleveland Cloth Mills. *Rayon Textile Monthly 27,* 77-8 (Feb. 1946).

The effect of wet, hot stretching of various yarns is discussed from the point of view that the fabrications of yarns to fabrics must be done with minimum mechanical damage.
LWR TTD:5-46.

YARN PROCESSING. Richard W. Stanley (to Am. Viscose Corp.). USP 2 396 297, Mar. 12, 1946.

In fluid treatment of yarn an improved reel is adaptable either to a cantilever or to a double-end supported structure. TTD:5-46.

FILAMENT CUTTER. Paul W. Crane & Reuben T. Fields (to Can. Industries, Ltd.). Can. P. 433 535, Mar. 12, 1946.

Tapered filaments (e. g. bristles) are cut by a device having a rotating knife. TTD:5-46.

YARN PACKAGE. Jos. S. Pecker, Henry A. Simpson & Abraham S. Kirshner (to Camille Dreyfus). Can. P. 433 615, Mar. 12, 1946.

Yarn packages are wrapped by a device consisting of

a wrapping head with spaced rollers operating at a constant speed. TTD:5-46.

Yarn products **III 5**

CORDAGE, binder twine and related manufacturing in Germany. E. W. Brewster, Plymouth Cordage Co. *Cord Age Mag. 45,* No. 3, 12, 14, 34 (Apr. 1946).

A report of the TIIC surveys German methods and practices. TTD:5-46.

RAYON TIRE CORD. Best tires ever. George Albee, *duPont Mag. 40,* No. 1, 4-6 (Mar. 1946).

A brief review of rayon cord in tires is given. TTD:5-46.

THREAD AND CORDAGE. Softening and breaking. Technologist. *Fibres 7,* 31-6 (Feb. 1946).

Use of the vegetable fibers, particularly flax and hemp but also jute and sisal, in the manufacture of thread and cordage is discussed. That certain synthetics, especially nylon, may offer serious competition to vegetable fibers is noted. The 2 main types of softening machines, horizontal and circular, are described. TTD:5-46.

Yarn applications **III 6**

COATED YARN. Am. Cyanamid Co. Brit. P. 572 301. *Textile Mfr. 72,* 81a (Feb. 1946).

A polyamide coated yarn. TTD:5-46.

YARN TO FABRIC **IV**

Yarn preparation **IV 1**

YARN PREPARATION. Slasher production improved by use of gas burner. J. Lamar Moore, Pacific Mills. *Cotton* (Atlanta) *110,* No. 2, 101-3 (Feb. 1946).

An 18% increase in production is accomplished by adding an open-flame gas burner to the slasher. TTD:5-46.

YARN HOLDER. Geo. W. Parkin. USP 2 396 120, Mar. 5, 1946.

In a weft replenishing loom an improved thread holder permits location within 4-6" of the bobbin magazine instead of at a distance of a yard or more, as heretofore, thus allowing a substantial yarn saving. TTD:5-46.

Warp sizing **IV 2**

PLATE SINGEING and its value in heat treatment and uniform processing of textile fabrics. H. S. Sivart. *Am. Dyestuff Reptr. 35,* 82, 84-5 (Feb. 11, 1946).

Plate contact singeing is a method of heat treating fabrics that is economical even though initial cost is higher. Heat can be localized and plates are removable. TTD:5-46.

WARP SIZING of spun rayon. Ralph Hart, Hart Products Corp. *Am. Dyestuff Reptr. 35,* 79-82 (Feb. 11, 1946).

Weaving efficiency of warp sizing materials used in sizing spun rayon warps is outlined from a special report of the Textile Foundation. TTD:5-46.

YARN WARPING. Reiner high-speed beaming machine. Anon. *Textile Weekly 37,* 282, 284, 286 (Feb. 8, 1946).

A new machine for warping fine yarns (filament and spun rayon, cotton, wool, worsted, linen, acetate, nylon, etc.) is directly driven, with a speed range of 100-1000 yds/min. TTD:5-46.

Looms **IV 3 a**

LOOM. New automatic bobbin-changing loom for weaving rayon crepes. Anon. *Textile Recorder 63,* No. 754, 36-7, 43 (Jan. 1946).

With continued improvement in rayon a bobbin-changing loom (Northrop) is possible in place of the shuttle-changing type (which was needed formerly to minimize contact of the delicate rayon weft with loom parts). In 2 x 2 weaving, for example, the bobbin-changer requires only 2 shuttles whereas the shuttle-changer may need 10 shuttles. TTD:5-46.

LOOMS—and the future. F. I. Sharp, Wm. Yates & Sons, Ltd. *Textile Weekly 37,* 312, 314, 316 (Feb. 15, 1946).

Ways of improving weaving are discussed, 10 specific suggestions being made. TTD:5-46.

LOOMS. Essential points in weft mixing. D. C. Snowden, Leeds Univ. *Wool Record & Textile World 69,* 242-4 (Jan. 31, 1946).

A large proportion of fully- and semi-automatic looms for manufacturers of fancy woolens and worsteds is suggested. TTD:5-46.

LOOMS. Cloth taking-up motions. D. C. Snowden, Leeds Univ. *Wool Record & Textile World 69,* 354-6, 407, 409, 410-11 (Feb. 14, 21, 1946).

The taking-up motions of different looms are described in some detail. The positive and negative type motions are contrasted; the positive motion is in more general use today, but the negative type is preferred by some still. TTD:5-46.

NEW LOOM for silk and rayon: Yorkshire firm's 16-shaft dobby with negative action. J. W. Hutchinson. *Silk & Rayon 20,* 240-1 (Feb. 1946).

A new loom (Wilson and Longbottom) is described and illustrated. TTD:5-46.

SHUTTLELESS LOOMS. Gledhill's shuttleless loom. J. W. Hutchinson. *Fibres 7,* 40-3 (Feb. 1946).

Operation of this shuttleless loom is described in some detail and illustrations are given. TTD:5-46.

Loom parts — IV 3 b

LOOM PARTS. Drawtex—a flat heddle drawing-in unit. Anon. *Rayon Textile Monthly 27,* 158 (Mar. 1946).

A new frame is adaptable for attachment to machines now on the market. TTD:5-46.

LOOM PARTS. Anon. *Textile Bull. 69,* No. 12, 60 (Feb. 15, 1946).

A new picker stick made of Plyweld (E. H. Jacobs Mfg. Co.) is said to outwear an average of 15 hickory sticks. TTD:5-46.

LOOM PART. Richard G. Turner (to Crompton & Knowles Loom Wks.). USP 2 396 215, Mar. 5, 1946.

On a weft replenishing loom an improved thread accumulator, pneumatically connected with a thread remover and holder, permits emptying without destroying the partial vacuum of the system. TTD:5-46.

LOOM PART. Walter H. Wakefield (to Crompton & Knowles Loom Wks.). USP 2 396 354, Mar. 12, 1946.

On a weft replenishing loom a pneumatic thread holder is mounted on the bobbin magazine support extending through it and between reserve bobbins so that its intake may receive weft ends. TTD:5-46.

LOOM SHUTTLE GUARD. Geo. A. & Arrie Gill. USP 2 396 780, Mar. 19, 1946.

A shuttle guard that does not interfere with thread drawing, adaptable to all types of looms, consists of an open frame hinged to the reed cap, and reduces the chance of injury from a flying shuttle. TTD:5-46.

LOOM REED. Richard G. Turner (to Crompton & Knowles Loom Wks.). USP 2 396 974, Mar. 19, 1946.

A loom reed having variably spaced dents permits change of gage and pitch and eliminates the need for a number of different reeds. TTD:5-46.

BOBBIN. Geo. B. Markle, Jr. (to Freeland Spool & Bobbin Corp). USP 2 397 362, Mar. 26, 1946.

An improved bobbin has ends held by screws which permit easy removal. TTD:5-46.

SHUTTLE GUARD. J. & W. Sim (to Boardman & Baron, Ltd.). Brit. P. 571 773. *Textile Mfr. 72,* 109 (Feb. 1946).

A shuttle guard for looms is loosely supported in a pair of brackets in a horizontal position over the warp, permitting easy detachment by the operator. TTD:5-46.

LOOM SHUTTLES. Sulzer Frères S. A. Brit. P. 571 828. *Textile Mfr. 72,* 110 (Feb. 1946).

Knocks and friction are reduced on a shuttle which moves in a guide. TTD:5-46.

LOOM PARTS. J. R. Tattersall. Brit. P. 571 955. *Textile Mfr. 72,* 111 (Feb. 1946).

A picking parallel for an under-pick loom has a bearing pad for the picking stick, which projects partly into the picking stick slot and may be removed when necessary. TTD:5-46.

SHUTTLE PIN. J. Pilkington (to Pilkington's Ltd.). Brit. P. 571 972. *Textile Mfr. 72,* 111 (Feb. 1946).

A pivot pin for the shuttle tongue comprises a shell of hard wood, fiber, or other such material, with a steel core. TTD:5-46.

BOBBIN TRANSFER. Richard G. Turner (to Crompton & Knowles Loom Wks.). Can. P. 433 551, Mar. 12, 1946.

A weft replenishing loom has a bobbin transfer magazine operating in conjunction with a weft detector which actuates a transfer mechanism. TTD:5-46.

Control devices — IV 3 c

STOP MOTIONS. Mechanical and electrical warp stop motions. VIII, IX, X, I. Laird. *Textile Mfr. 71, 72,* 419-20, 475-7, 481, 83-7 (Oct., Nov., 1945; Feb. 1946).

Illustrated description of warp stop motions for looms and stop motions for knitting machines. Some early types such as the lease-rod electric and the mercury pan electric stop motion are compared with later designs. An American stop motion using individual 12 volt a. c. solenoid transformers is described. A Swiss electric harness stop motion (particularly for silk and rayon) is also described and illustrated by diagrams. TTD:5-46.

LOOM CONTROL. Yervant H. Kurkjian. USP 2 396 377, Mar. 12, 1946.

An improved automatic let-off control maintains a uniform tension of the warp threads by action on the warp beam brake band. TTD:5-46.

WEAVING. C. H. Baddeley. Brit. P. 571 707. *Textile Mfr. 72,* 108 (Feb. 1946).

A new means of inserting warps dispenses with the usual reed and substitutes a creel for the warp beam. TTD:5-46.

LOOM CONTROL. T. Hindle. Brit. P. 571 947. *Textile Mfr. 72,* 111 (Feb. 1946).

The heald frames, picking, and box motions of looms are positively controlled by hydraulic action of power pistons. TTD:5-46.

STOP MOTION. H. S. Cargill, A. & J. A. Galloway. Brit. P. 571 861. *Textile Mfr. 72,* 110 (Feb. 1946).

An improved warp protector stop motion for looms actuates buffers to effect a shift of the warp yarn beam. TTD:5-46.

LOOM PICKER CONTROL. D. Walton (to Hindley Bros., Ltd.). Brit. P. 572 109. *Textile Mfr. 72,* 112 (Feb. 1946).

A picker control for drop-box looms is actuated by a cam on the bottom shaft of the loom. TTD:5-46.

Fabric construction — IV 3 d

NOVELTY WEAVES for piece dyed mixture fabrics. Raffaele Sansone. *Textile Recorder 63,* No. 755, 43-4 (Feb. 1946).

Three different designs are discussed and illustrated. TTD:5-46.

SCOTTISH WOOLENS. Anon. *Internatl. Textiles 1946,* No. 2, 67-74.

A brief history (with photographs) is given of Scottish tweeds and cheviots. TTD:5-46.

TWEED FABRICS. Use of fancy twist yarns. Utility coating, overcoating, and sports wear tweeds for export. Portex. *Wool Record & Textile World 69,* 240-1 350, 352, 404, 406, 461, 463 (Jan. 31, Feb. 14, 21, 28, 1946).

Designs are suggested for fancy coating tweeds from fancy or novelty twist yarns. A wide range of qualities, structures and finishes is to be found in overcoating tweeds in which cashmere is used alone or combined with woolen yarns. Single yarns of homespun, Harris, and Shetland are favored in lighter weight fabrics. Colorful checked patterns are to be found in utility clothes for women's wear. Pattern arrangements are suggested. TTD:5-46.

VENTILE FABRICS. Anon. *Textile Age 10,* No. 2, 84, 86 (Feb. 1946).

A new water-repellent fabric which possesses the quality of "ventility" is woven (on the Oxford plain weave principle) of cotton yarns of a special twist. TTD:5-46.

ELASTIC FABRIC. Sterling W. Alderfer (½ to Edw. D. Andrews). USP 2 396 482-3, Mar. 12, 1946.

In producing elastic fabric, composed of rubber strands and cotton, rayon, or other textile material, instead of 2 operations, consisting first of covering the rubber thread and then of weaving the fabric, only one operation is necessary. By this improved method the electric cores are wrapped and a weft thread passed through the cables to form the completed fabric in a single operation. Also, in order to give greater strength to the fabric in case of a break in one or more of the cores, each elastic filament is held by the weft thread and by its companion filament as well. TTD:5-46.

CHEESECLOTH. Ross C. Whitman (to Kendall Co.). USP 2 396 905, Mar. 19, 1946.

A 2-ply woven cheese-packaging material (tubular in form) of 20-50s cotton yarn is used to enclose pressed cheeses such as Cheddar. This bandage prevents lateral swelling of the cheese with possible breakage, leading to mold formation. TTD:5-46.

Weave defects — IV 3 e

DEFECTS. Formation of gray creases in rayon goods. H. E. Wenrich. *Rayon Textile Monthly 27,* 78-80 (Mar. 1946).

Common causes of creases in rayon broad goods are described. Workers must be made to admit errors at once in order to effect a remedy.
HAM TTD:5-46.

Knitting machines — IV 4 a

KNITTING. New interlock knitting machine. Anon. *Textile Recorder 63,* No. 754, 38-9 (Jan. 1946).

A new 3/LRM interlock machine has 3 important features: (1) a new type feed wheel, (2) increased number of feeders, and (3) patent draw-down mechanism, which operates on a circular track whose angle variation varies the rate of cloth withdrawal. TTD:5-46.

KNITTING MACHINE. New model double cylinder knitting machine. Anon. *Textile Recorder 63,* No. 755, 38-40 (Feb. 1946).

A new machine is described for making ribbed, plain hose, half hose, three-quarter hose, socks, etc. TTD:5-46.

KNITTING MACHINE. Grosser Knitting Machine Co. to build full-fashioned knitter for outerwear. Alfred D. Cook. *Daily News Record* No. 111, 11 (May 13, 1946).

A fully automatic full-fashioning links-links knitter is described and illustrated. TTD:5-46.

KNITTING MACHINE. Anthony F. Fiorentino (to Alfred Hofmann & Co.). USP 2 395 807, Mar. 5, 1946.

On warp knitting machines, such as the double tricot, a power driven mechanism with a timed clutch and a resiliently supported yarn pilot relieves the yarns from starting the rotation of the reels at each feed cycle, the reel being thus power rotated with automatic braking action. TTD:5-46.

KNITTING MACHINE. Thos. S. Hayhurst (to Max Nydegger). USP 2 395 814-23, Mar. 5, 1946.

A multiple flat-links knit-purl knitting machine provides simultaneous change of stitch length on knitting sections, an improved positioning device for needle-jacks, a selector bar for actuating control jacks, and an improved jacquard control operable from a continuous pattern band. TTD:5-46.

KNITTING. Bentley Eng. Co., Ltd. Australian P. 120 533. *Textile J. Australia 20,* 582 (Feb. 1946).

An independent latch needle knitting machine has an improved stitch transfer device. TTD:5-46.

KNITTING MACHINE. Harry W. & Ernest Start (to Geo. Blackburn & Sons, Ltd.). USP 2 396 445, Mar. 12, 1946.

Eliminating use of a friction drive, a positively driven reciprocating thread carrier driving bar automatically engages and disengages on a straight-bar knitting machine. TTD:5-46.

KNITTING MACHINE. Edwin Wildt, Henry H. Holmes & Jno. C. H. Hurd (to Wildt & Co., Ltd.). USP 2 396 767, Mar. 19, 1946.

A circular knitting machine for producing structure and pattern effects has cylinder needles selectively operated by a pattern controlling means. TTD:5-46.

KNITTING MACHINE. Arthur Theobalt. USP 2 397 221, Mar. 26, 1946.

Through improved support of the friction-driven take-up roller, a take-up mechanism on a knitting machine minimizes the possibility of bunching, backing up, or binding in drawing-off the knitted fabric. TTD:5-46.

KNITTING MACHINE. H. W. & E. Start (to G. Blackburn & Sons, Ltd.). Brit P. 572 349. *Textile Mfr. 72,* 81a (Feb. 1946).

A straight bar knitting machine has a positive drive (instead of friction drive) for the thread carrier bar. TTD:5-46.

Knitting machine parts — IV 4 b

HOSIERY KNITTING. Alfred Hofmann, Donald G. Trutner & Friedrich M. Wachtler (to Alfred Hofmann, Inc.). USP 2 396 263, Mar. 12, 1946.

An improved welt bar for automatic or semiautomatic welt turning is attachable to flat knitting machines. TTD:5-46.

KNITTING MACHINE. Ernest Brooksby & Frederick E. Deans (to Bentley Eng. Co., Ltd.). USP 2 396 489, Mar. 12, 1946.

On independent needle knitting machines an improved method eliminating latch guards supplies feed yarn to the needle hooks. TTD:5-46.

KNITTING MACHINE PART. Ernest Brooksby & Frederick E. Deans (to Bentley Eng. Co., Ltd.). USP 2 396 490, Mar. 12, 1946.

A picker device on circular knitting machines controls short butt needles and prevents picking of undesired needles. TTD:5-46.

KNITTING MACHINE. Henry H. Holmes (to Wildt & Co., Ltd.). USP 2 396 656, Mar. 19, 1946.

A pouch compensating device, to be used in conjunction with a conventional take-up mechanism, equalizes tension in knitting pouches (such as for heels and toes) on circular knitting machines. TTD:5-46.

HOSIERY KNITTING. Frank G. & Julius Weisbecker (to Hosiery Patents, Inc.). USP 2 396 766, Mar. 19, 1946.

In manufacture of stocking blanks on full-fashioned knitting machines an improved tensioning device for widening blanks (e. g. in forming heel sections) gives a crosswise tension and does not impede normal draw-off movement. TTD:5-46.

KNITTING MACHINES. Julius Sirmay (to Jacquard Knitting Machine Co., Inc.). USP 2 397 456, Mar. 26, 1946.

An improved knitting machine needle makes possible stitch transfers in various pattern or design effects on jersey and other fabrics. TTD:5-46.

SPLICING YARN. Hemphill Co. Brit. P. 571 702. *Textile Mfr. 72,* 108 (Feb. 1946).

On a circular independent needle knitting machine a feeder cooperating with rotating needles splices yarn. TTD:5-46.

KNITTING MACHINE BINDER. Isaac H. Green & Robt. H. Lawson (to Hemphill Co.). Can. P. 433 413, Mar. 5, 1946.

On a circular knitting machine a yarn binder binds one type of yarn separately from another. TTD:5-46.

Control devices — IV 4 c

STOP MOTION. Lawrence W. Griffis (to Van Raalte Co., Inc.). Can. P. 433 606, Mar. 12, 1946.

Through capillary action in an electrical field a thread failure actuates a stop motion on textile machinery. TTD:5-46.

STOP MOTION. Clyde B. Hayes & Howard H. Thorpe (to Van Raalte Co., Inc.). Can. P. 433 728, Mar. 19, 1946.

An air current directed against yarn from a warp beam on a knitting machine displaces any broken threads, which in turn actuate a stop motion. TTD:5-46.

STOP MOTION. Harry Searles, Lawrence W. Griffis & Ellsworth E. Carlson (to Van Raalte Co., Inc.). Can. P. 433 729, Mar. 19, 1946.

An electrostatic field between spaced electrodes attracts broken threads of yarn as it comes from the warp beam of a knitting machine, actuating a stop motion. TTD:5-46.

KNITTING MACHINE CONTROL. Wm. G. Macdonald & Geo. Wilders (to Wm. Cotton, Ltd.). Can. P. 433 798, Mar. 26, 1946.

On a straight-bar knitting machine a knocking-over bar is moved lengthwise and crosswise of the line of needles. TTD:5-46.

KNITTING MACHINE CONTROL. Geo. Wilders & Jno. E. Lynam (to Wm. Cotton, Ltd.). Can. P. 433 799, Mar. 26, 1946.

A speed controller for straight-bar knitting machines is manually regulated for varying speeds; any given manual setting automatically controls at least 2 temporary reductions. TTD:5-46.

Fabric construction **IV 4 d**

PLASTIC FABRICS. Glamor and utility in plastic fabrics. Anon. *Modern Plastics 23,* No. 6, 106-9 (Feb. 1946).

Fabrics woven from Velon (vinylidene chloride) are discussed and illustrated. TTD:5-46.

HOSIERY KNITTING. Carl Richter. USP 2 395 908, Mar. 5, 1946.

In knitting stocking blanks on a single unit machine the leg and foot portions are joined uniformly at the instep, with continuous knitting through the turn of the heel. A separate footer machine is eliminated, and there are no bulky seams at the junction of the sole and low heel parts. TTD:5-46.

HOSIERY KNITTING. Beale J. Faucette (to Scott & Williams, Inc.). USP 2 396 166, Mar. 5, 1946.

In manufacture of stockings from synthetic yarns, particularly nylon, the necessary difference in width of the various parts of the stocking (top, leg, ankle, heel, and toe) is made possible by use of yarns varyingly shrunk. Preshrunk yarns are used in the top and leg while in the ankle and heel substantially unshrunk yarns are used. TTD:5-46.

HOSIERY KNITTING. C. M. Severn & H. A. Turner (to Seal & Turner, Ltd.). Brit. P. 572 273. *Textile Mfr. 72,* 81a (Feb. 1946).

An improved method of knitting a stocking blank with a round heel. TTD:5-46.

HOSIERY KNITTING. Sterling C. Mack (to Julius Kayser & Co.). Can. P. 433 421, Mar. 5, 1946.

Selvedge widened heel sections of hosiery blanks, knit on a flat knitting machine, use at least 3 body yarns and 2 reinforcing yarns. TTD:5-46.

Pile fabrics **IV 5**

PILE FABRICS. Jas. A. Clark (to Sylvania Industrial Corp.). USP 2 391 867, Jan. 1, 1946.

An adhesive backing is applied to a pile fabric consisting essentially of a cellulose ether in NaOH solution and rubber latex. Example (by wt.): 8 parts hydroxyethyl cellulose in 92 parts 4% NaOH; to this solution is added 9.5 parts rubber latex. The treated fabric is passed through a 5% acetic acid coagulating bath, washed, and finished. TTD:5-46.

PILE FABRICS. Richard E. Ford & Jno. W. Hunt (to Continental Carpet Corp.). USP 2 395 217, Feb. 19, 1946.

A flock-coating apparatus has an improved beater for embedding the flock (fibers of cotton, silk, rayon, wool, flax, jute, etc.) in an adhesive base to form a pile fabric. Fiber length may be ½" or more, preferably ¼", instead of 1/25" as formerly. TTD:5-46.

PILE RUG. Milton Newman. USP 2 396 525, Mar. 12, 1946.

A warp knit pile rug imitative either of terry cloth or of plush, consists of a series of chain stitches each knit of a separate yarn individual to each needle, with weft yarns forming the backing. TTD:5-46.

PILE FABRICS. R. & J. Pickles. Brit. P. 571 888. *Textile Mfr. 72,* 110 (Feb. 1946).

A pile fabric is formed by pressing threads (between rollers with intermeshing teeth) into an adhesively surfaced backing sheet. TTD:5-46.

PILE FABRICS. Leroy N. Linscott (to Alexander Smith & Sons Carpet Co.). Can. P. 433 446, Mar. 5, 1946.

A pile fabric with an adhesive backing is made on a machine having a rotor with a number of grippers, a severing device, and a pile-depositing means. TTD:5-46.

Narrow fabrics **IV 6**

FLEXIBLE WEBBING. Geo. A. G. Beerli (to Congoleum-Nairn, Inc.). USP 2 395 799, Mar. 5, 1946.

A machine slits the edges of a reinforced smooth-surface rug (such as a linoleum rug), inserts a reinforcing web and reseals the edges under pressure. TTD:5-46.

BELT. Walter H. Van Buren (to B. F. Goodrich Co.). Can. P. 433 693, Mar. 19, 1946.

A power transmission belt consists of a fabric cover on rubber (or the like) material. TTD:5-46.

Fancy fabrics **IV 7**

ACETATE VEILING FABRIC and fine yarn problems. Anon. *Am. Wool Cotton Reptr. 60,* No. 6, 11-12 (Feb. 7, 1946).

Fine denier rayon yarns make light, transparent (or veiling) fabrics; they may be of viscose or acetate yarns, the acetate probably being more desirable. Careful handling to avoid strain and breakage is necessary. TTD:5-46.

Fabric processing **IV 8**

NYLON PREBOARDING MACHINE. Anon. *Can. Textile J. 63,* No. 4, 41 (Feb. 22, 1946).

A new machine (Proctor & Schwartz) occupies a space 10 sq. ft. and has a capacity of 18 doz. pairs per hour. TTD:5-46.

PREBOARDING NYLON HOSE. New plant for preboarding, dyeing, and finishing nylon hose. Anon. *Textile Recorder 63,* No. 755, 36-7, 40; *Textile Mfr. 72,* 88-9 (Feb. 1946); *Dyer 95,* 137, 139-41, 143 (Feb. 1, 1946).

A new automatic preboarding machine, with a capacity of about 10 doz. pairs per hour, is described and illustrated. TTD:5-46.

CLOTH CUTTING GUARD. A. Bellow. Brit. P. 571 766. *Textile Mfr. 72,* 109 (Feb. 1946).

On an electric cloth cutting machine a detachable cover secured over the knife acts as a guard. TTD:5-46.

SHRINKING FABRICS. F. R. Redman. Brit. P. 571 821. *Textile Mfr. 72,* 110 (Feb. 1946).

A shrinking process consists in rumpling the fabric lengthwise and widthwise, without tension, in the presence of heat and moisture. TTD:5-46.

CLOTH SHRINKING. Cluett Peabody & Co., Inc. Brit. P. 572 061. *Textile Mfr. 72,* 111 (Feb. 1946).

A cloth shrinking machine has curved steel heated pressure members carrying thermoswitches to control the heating elements. TTD:5-46.

FABRIC WINDER. Cyril M. Croft, Alvin W. Bergeron & Frederick G. Dodge (to Camille Dreyfus). Can. P. 433 739, Mar. 19, 1946.

Fabric is positively fed from a guide roll to be wound on a take-up roll. TTD:5-46.

Fabric applications IV 9

COTTON TEXTILES in electrical industry. L. R. Hill, Westinghouse Electric Corp. *Am. Wool Cotton Reptr. 60,* No. 8, 11-12 (Feb. 21, 1946).

The uses, and also the limitations, of cotton as applied to electrical insulation are discussed. The relative thermostability of untreated cotton cloth is of importance in the electrical industry. TTD:5-46.

LAMINATES. Fabrication of high pressure laminates. Richard M. Lane. *Modern Plastics 23,* No. 4, 146-8; No. 6, 148-53 (Dec. 1945; Feb. 1946).

Laminates made from paper, cotton, or synthetic fabrics by the high pressure method may be bonded with melamine resins or other synthetic resins. Their high heat insulating value is a disadvantage in fabrication since the heat of friction generated by drills or the like is not easily dissipated. Fabricating procedures, which are described in some detail, include: tapping and threading, shearing, broaching and punching, and marking and abrasive operations. TTD:5-46.

LAMINATES. What laminates offer. J. D. Nelson & L. V. Larsen, Gen. Electric Co. *Plastics 4,* No. 3, 62, 64-5, 311-13 (Mar. 1946).

A review of the general uses of laminates includes references to such fillers as sisal, fiberglas, asbestos, and nylon. TTD:5-46.

NEW SYNTHETIC COATINGS. Anon. *Internatl. Textiles 1946,* No. 2, 113.

War developed coatings, especially synthetic rubber, are commented upon. TTD:5-46.

SARAN coating latex. G. W. Stanton & W. A. Henson, Dow Chemical Co. *Ind. Eng. Chem. 38,* 468-72 (May, 1946).

Saran latex, used for coating cloth to form material resistant to moisture, adhesive tape, and laminates, is characterized by ease of application, rapidity of drying and low cost. The coatings have a high gloss, clarity, and toughness; they are fireproof, take any sort of color, and are resistant to H_2O, acids, alkalies, and organic solvents. The formulation techniques and physical properties of a new Saran latex are discussed. Applications other than in the textile field are considered.
WPU TTD:5-46.

ADHESIVE TAPE. Ara T. Dildilian (to Bigelow-Sanford Carpet Co., Inc.). USP 2 395 257, Feb. 19, 1946.

A tape, preferably an open leno weave, for use in binding together edges of carpets or rugs, is coated with a thermoplastic adhesive (e. g. a plasticized copolymer vinyl resin). Example (parts by wt.): copolymer vinyl acetate and vinyl chloride, Vinylite VYNS, 73; di-2-ethylhexoate of triethylene glycol, 25; lead stearate, 2. TTD:5-46.

METALLIZED FABRIC. C. T. Suchy (to Callendar-Suchy Developments, Ltd.). Brit. P. 572 071. *Textile Mfr. 72,* 112 (Feb. 1946).

Fabric is metallized by electrodeposition of metal after first immersing it in a solution containing a Ag compound and a reducing agent. TTD:5-46.

FABRIC COATING. E. I. duPont de Nemours & Co. Brit. P. 572 206. *Textile Mfr. 72,* 112 (Feb. 1946).

Fabric is given a nontacky protective coating composed of a synthetic resin (e. g. polyvinyl acetal resin). TTD:5-46.

AIR FILTERING. E. V. Giles. Brit. P. 572 394. *Textile Mfr. 72,* 81a (Feb. 1946).

Dust is removed from air by drawing the air through a passage lined with a long pile wool fabric which catches the dust particles in passing. TTD:5-46.

ELECTRIC CONDUCTOR COVERING. Clyde N. Stover (to Western Electric Co., Inc.). Can. P. 433 856, Mar. 26, 1946.

A knitted fabric, with spiraling courses and wales, covers an electrical conductor. TTD:5-46.

SURFACE-COATING WITH FLOCK. Booklet of Rayon Processing Co. of Rhode Island, Inc. Central Falls, R. I.

Reviewed in *Textile Bull. 69,* No. 12, 61 (Feb. 15, 1946). TTD:5-46.

CHEMICAL RAW MATERIALS V

Plastics V 1

ADVANCES IN PLASTICS in the United States and Germany. W. C. Goggin, Dow Chemical Co. *Chem. Eng. News 24,* 339-43 (Feb. 10, 1946).

Plastics developments in both countries are compared, particularly as to volume of production. Among the products mentioned are the polyamides, phenolic resins, urea resins, vinylidene chloride, vinyl ethers, isocyanates, silicones, allyl resins, etc. TTD:5-46.

PLASTICIZING RESIN. Anon. *Textile Bull. 69,* No. 12, 60 (Feb. 15, 1946).

Nevillac TS is a new plasticizer for use with zein, which has good waterproofing qualities and lasting flexibility. TTD:5-46.

PLASTICS in the rubber industry. H. A. Winkelmann, Dryden Rubber Co. *India Rubber World 113,* 799-804 (Mar. 1946).

The place of plastics in the rubber industry is reviewed. Included are representative lists of synthetic rubbers, elastomers, and plastics, along with tables showing properties of some. Use of synthetic fibers, such as nylon, rayon, Vinyon, and glass, increases the life of rubber products and gives added strength to them. TTD:5-46.

PLASTICS FOR TEXTILES. Development of plastics for peacetime textiles. D. H. Powers, Monsanto Chemical Co. *Am. Dyestuff Reptr. 35,* 76-8 (Feb. 11, 1946).

Increasingly larger markets for plastics are discussed: as impregnants in wool fibers, as continuous films, as binders, and as warp sizers. TTD:5-46.

PLASTICS TECHNOLOGY. Geon latex. Geo. W. Flanagan. *India Rubber World 114,* P83-4 (Apr. 1946).

The properties of Geon latex are described. Geon latex has found wide use in the textile field as a coating and impregnating compound. The method of application as described is relatively simple.
LWR TTD:5-46.

TEXTILE RESINS: Chem. & Met. Eng. 53, No. 5, 169-76 (May, 1946).

U. S. Rubber's "Canbar", as starch substitute for crisp finishes, is said to give permanency to laundering. Its "Vibrin" is a low-temperature, low-pressure laminating resin. American Cyanamid's "Sheerset" is a resin for use on sheer fabrics to hold their shape and crispness.
LCL TTD:5-46.

COATED FABRICS. Ernest A. Rodman (to E. I. duPont de Nemours & Co.). USP 2 396 129, Mar. 5, 1946.

Instead of using vegetable oils, such as castor, cottonseed, rapeseed, etc., in plasticizers for cellulose derivatives, especially cellulose nitrate, an air-blown raw corn oil is found quite suitable, when reacted with an acid anhydride like phthalic anhydride. Cellulose nitrate coated fabrics using this plasticizer are useful as bookbinding material as they may be blanked and printed immediately. TTD:5-46.

PLASTICIZING. Fred M. Roddy. USP 2 396 752, Mar. 19, 1946.

In plasticizing thermoplastic molding materials (cellulose acetate, vinyl compounds, polyamides like nylon, synthetic rubbers, etc.), difficultly soluble materials are forced into solution with plasticizers by rapid heating to high temperatures under pressure and immediate dissipation of heat and pressure accompanied by violent agitation. Because of the flash heating and cooling no chemical decomposition occurs; yet dissolving action is efficient. TTD:5-46.

FLAMEPROOFED PLASTICS. Wm. W. Koch (to Hercules Powder Co.). USP 2 397 320, Mar. 26, 1946.

A substantially nonflammable plastic, composed of ethyl cellulose, tricresyl phosphate and a water-insoluble heavy metal oxalate (about 15 wt.%), may be molded in supported or unsupported films, filaments, fibers, rods, etc. TTD:5-46.

PLASTIC BOBBINS. Columbian Rope Co. Brit. P. 571 728. *Textile Mfr. 72,* 108-9 (Feb. 1946).

A molded plastic bobbin which will not splinter or fracture when dropped has heads formed of a hard fiber filler with thermoplastic binder. Composition of an example (wt.%) is: fiber; 60 binder; 40. TTD:5-46.

FABRICATION OF PLASTICS. I. G. FARBENINDUSTRIE. Combined Intelligence Objectives Sub-Committee Report XXVII-16; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Feb. 1946). TTD:5-46.

INDUSTRIAL PLASTICS. Herbert R. Simonds, Pitman Publishing Corp., New York City; ed. 3; 1945; 396 pp.; price $5.00.

Reviewed in *Mech. Eng. 68,* 169-70 (Feb. 1946). TTD:5-46.

INVESTIGATION OF GERMAN PLASTICS PLANTS. Combined Intelligence Objectives Sub-Committee Report XXIX-62; price 18s 11d.

Listed in *Govt. Publications (Great Britain)* (Feb. 1946). TTD:5-46.

MODERN PLASTICS. Harry Barron, Chapman & Hall, Ltd., London, 1945; 695 pp.; price 42s.

Reviewed in *Chemistry & Industry 1946, 79* (Feb. 16, 1946). TTD:5-46.

PLASTICS DEVELOPMENTS IN 1946. J. R. Turnbull. Chemurgic Papers Series 3, No. 455; Nat'l. Farm Chemurgic Council, Columbus, O.; 1946; 6 pp. TTD:5-46.

PLASTICS SCIENTIFIC AND TECHNOLOGICAL. H. R. Fleck, English Universities Press, Ltd., London; 1945; 361 pp.; price 30s.

Reviewed in *J. Sci. Instruments 23,* 86 (Apr. 1946). TTD:5-46.

PRODUCING DURABLE GLAZE ON CHINTZ. Textile Finishing Bull. 101, Am. Cyanamid Co., Bound Brook, N. J.

Reviewed in *Am. Wool Cotton Reptr. 60,* No. 7, 63, 65 (Feb. 14, 1946). TTD:5-46.

Surface-active compounds — V 4

DETERGENCY. Low cost reflectometer and method for comparing detergency. Murry L. Hurwitz, Apex Chemical Co. *Am. Dyestuff Reptr. 35,* 83-4 (Feb. 11, 1946).

Quantitative numerical ratings may be assigned washed samples by means of a simplified test method that uses a 45° reflectance reflectometer and the Launderometer. The procedure combines methods of Rhodes and Brainard, Snell, and wash tests of AATCC with simplifications. TTD:5-46.

DETERGENTS. Sulfit A/B Göta. Swed. P. Appl. 4182/1944. *Svensk Papperstidning 49,* 65 (Feb. 15, 1946).

Process for making wetting agents from tall oil resin or fatty acids. TTD:5-46.

EVALUATION OF SURFACE ACTIVE AGENTS. Jay C. Harris, Monsanto Chemical Co. *ASTM Bull.* No. 140, 76-83 (May 1946).

Surface-active agents are important in that they reduce foam and have detergent properties. Tests evaluating the properties of such reagents are given. HAM TTD:5-46.

CHEMICAL PROCESSING — VI

TEXTILE PROCESSING for increased absorbency. Anon. *Rohm & Haas Reptr. 4,* No. 2, 9-11 (May 1946).

The scouring action of Triton 770 reduces processing time in such operations as kier boiling, bleaching, desizing, Sanforizing, etc. TTD:5-46.

GLYCERIN, ITS INDUSTRIAL AND COMMERCIAL APPLICATIONS. Georgia Leffingwell & M. A. Lesser. Chemical Publishing Co., Brooklyn, N. Y.; 1945; 302 pp.; price $5.00.

Reviewed in *Rayon Textile Monthly 27,* 122 (Mar. 1946). TTD:5-46.

Preparation — VI 1

DRYING. Sargent raw stock dryer. Anon. *Can. Textile J. 63,* No. 3, 43 (Feb. 8, 1946).

The Sargent dryer is a single apron type and includes traveling stock guides, pressure type fan, and expanded surface heaters. TTD:5-46.

CELLULOSE LINTERS. Robt. B. Darling (to Hercules Powder Co.). USP 2 394 370, Feb. 5, 1946.

In the preparation of cellulose for production of cellulose acetate by acetylation, bleached cotton linters are purified in a water bath softened by Mg and Ca ions. There is increased heat stability and freedom from haze. TTD:5-46.

TENTERING MACHINE. Brit. Celanese Ltd. Brit. P. 571 575. *Textile Mfr. 72,* 108 (Feb. 1946).

In a tentering machine for drying fabrics a slot in a vacuum tube is automatically adjusted to the width of the fabric as it passes over it. TTD:5-46.

DRYING WEBS. J. A. Reavell. Brit. P. 572 113. *Textile Mfr. 72,* 112 (Feb. 1946).

Infrared rays dry material as it is drawn along a bow-shaped path. TTD:5-46.

FABRIC DRIER. Dewey & Almy Chemical Co. Brit. P. 572 607. *Textile Mfr. 72,* 81a (Feb. 1946).

A chamber with twisted rods extending across it, and through which gas is forced, dries fabric as it is carried through during a printing process. TTD:5-46.

FIBERS. Swed. P. Appl. 1861/1943. Texis Société Anonyme Textile. *Svensk Papperstidning 49,* 40 (Jan. 31, 1946).

Process for treating fibrous materials. TTD:5-46.

Milling; fulling — VI 3

FULLING. Soaping methods in fulling; hand, machine, metered. Anon. *Am. Wool Cotton Reptr. 60,* No. 9, 11-12 (Feb. 28, 1946).

The various methods of fulling and the operations connected with using a fulling mill are briefly discussed. TTD:5-46.

SOAPS in the wool industry. Anon. *Am. Wool Cotton Reptr. 60,* No. 9, 24 (Feb. 28, 1946).

High titer soaps are considered best for fulling cotton warp fabrics, worsteds and low grade stocks; for very fine fabrics, such as dress cloths and suitings, a low titer soap is desirable. TTD:5-46.

Acid baths — VI 4

PROCESSING FABRICS. Willard L. Morgan & Earle D. McLeod (to Arnold Hoffman & Co., Inc.). Can. P. 433 367, Mar. 5, 1946.

Textile material is impregnated with the salt of a substituted urea compound in a softening process. TTD:5-46.

Alkali baths — VI 5

ALKALIES in the treatment of acetate rayon. Anon. *Silk & Rayon 20,* 237, 239-40 (Feb. 1946).

A difference in saponification between cellulose esters and ethers has importantly influenced acetate rayon production. Because of its ready saponification by alkalies (even in weak solutions of soda ash) acetate rayon requires careful handling, especially in mixtures with other fibers. Advantages and disadvantages of saponification are discussed, particularly as it affects swelling and stretching of the fibers.
TTD:5-46.

ALKALI TREATMENT. A/B Kamyr. Swed. P. Appl. 1377/1941. *Svensk Papperstidning 49,* 109 (Mar. 15, 1946).

A method and apparatus for continuous treatment of fibrous materials with alkali. TTD:5-46.

Sizing — VI 6

CALENDERING. E. F. Hunt (to Hunt & Moscrop, Ltd.). Brit. P. 571 792. *Textile Mfr. 72,* 109 (Feb. 1946).

The bowls of a calendering machine have improved self-aligning bearings. TTD:5-46.

SIZING. F. G. L. Becker. Swed. P. 116 230, April 21, 1946. *Svensk Papperstidning 49,* 181 (Apr. 30, 1946).

Sizing compositions for paper and other fibrous materials are made by dispersing a resin or bitumen (softening point between 35 and 100°C) in an aqueous medium containing a protective colloid such as casein or gelatin. The amount of protective colloid may be decreased by introducing a colloid such as kaolin which is inert with respect to the sizing process.
TTD:5-46.

Finishing — VI 7

CEGLIN FINISH DESCRIBED. Anon. *Cotton* (Atlanta) *110,* No. 2, 138 (Feb. 1946).

A new cellulose ether finish, available in 5 different types, each with a different viscosity, gives rayon and cotton cloth a more durable finish, with better hand and reduction in shrinkage. TTD:5-46.

FINISHES favor cotton's future. W. R. Howell, Bradford Dyeing Ass'n. *Daily News Record* No. 111, 32 (May 13, 1946).

Durability and faster colors are insuring cotton's place among fibers. TTD:5-46.

FINISHING. Changes in the dimension of union fabrics during finishing. C. P. Atkinson & C. S. Whewell. *Textile Recorder 63,* No. 755, 45-6, 52 (Feb. 1946).

Dimensional changes in union fabrics (containing wool mixed with Fibro or Rayolanda) are examined under varying finishing conditions. Data obtained are tabulated. TTD:5-46.

FINISHING. Brit. Celanese, Ltd. Brit. P. 571 971. *Textile Mfr. 72,* 111 (Feb. 1946).

Acid-fading of cellulose esters is reduced by application during finishing of an aliphatic hydroxyamine (such as 3-propane-diol). TTD:5-46.

CREPING FABRIC. Cyril M. Croft & Wm. J. Cramer (to Camille Dreyfus). Can. P. 433 614, Mar. 12, 1946.

A creping effect is imparted to cellulose acetate fabric by immersion in a dye bath (containing 1-5 vol. % acetic acid) about 45 min. at 60°C, gradually raising to 90°C. TTD:5-46.

COLOR — VII

COLOR CONTRAST. Color as applied to textiles. Alex Bennett. *Textile J. Australia 20,* 508, 510, 564 (Jan., Feb. 1946).

Various modifications produced in one color by contact with another are considered. The ground on which colors are applied is important in determining relative value and intensity. Three principal methods for applying color to textiles are briefly discussed: in fiber, yarn, and piece form. TTD:5-46.

COLOR. Search for color in colonial times. Isabelle H. Daniel. *Textile Colorist 68,* No. 3, 16-17, 43 (Mar. 1946).

A historical note. TTD:5-46.

COLOR SCIENCE. Selected references relating to the field of color science. Dorothy Nickerson, USDA Production & Marketing Administration. *Textile Research J. 16,* 74-83 (Feb. 1946).

A specialized bibliography in the field of color science is presented, with 39 references including general references, color standards, and color tests.
LWR TTD:5-46.

DYEING AND PRINTING—a comparison. O. B. Charles. *Textile Bull. 69,* No. 11, 16, 18, No. 12, 46, 48, 65 (Feb. 1, 15, 1946).

Dyeing and printing methods for applying substantive dyes (especially to cotton, viscose and cuprammonium rayon) are discussed in a brief survey. Application of wool acid colors to wool and casein fibers and especially their use on viscose and cuprammonium rayon is considered. Use of acid colors for nylon and acetate rayon is noted. TTD:5-46.

Bleaching — VII 1

BLEACHING PEANUT PROTEIN. Anon. *Chemurgic Digest 5,* 80 (Feb. 15, 1946).

A lye solution bleaches the red color (from the red skin of the peanut) which is found objectionable in spinning fibers. This treatment costs less than 1c a pound. TTD:5-46.

BLEACHING. Korsnäs Sogverks A/B. Swed. P. Appl. 4407/1938. *Svensk Papperstidning 49,* 161 (Apr. 15, 1946).

Process for bleaching fibrous materials containing cellulose. TTD:5-46.

Dyeing VII 2

CROSS DYEING socks gives heather effect. Anon. *Textile World 96,* No. 2, 127 (Feb. 1946).

Directions are given for achieving a particular pattern effect in socks by cross dyeing. TTD:5-46.

DYEING. Woolen and worsted piece dyeing. W. H. Wadsworth, W. H. Wadsworth & Co., Ltd. *Textile Mfr. 72,* 96-8 (Feb. 1946).

Factors influencing dyeing results on wool and worsted cloths are considered in a lecture. TTD:5-46.

DYEING FUR. Pitfalls for the unwary in fur dressing and dyeing. Anon. *Dyer 95,* 172-4 (Feb. 15, 1946).

Practical suggestions are offered employees returning from the war. TTD:5-46.

DYEING METHODS for woven and knitted fabrics. Anon. *Silk & Rayon 20,* 232-4, 362-3, 365, 367 (Feb., Mar. 1946).

Practical considerations of fabric structure must govern in dyeing fabrics which may be delicate or fragile and likely to be damaged by excessive stretching or undue pressure. Problems of dyeing rayon in jig machines are considered. The jig and the winch dyeing machines are compared. An important difference between the 2 machines is that fabrics are dyed in open width on the jig and in rope form on the winch dyeing machine. A second important difference is the time that the fabric is immersed in the dye liquor in each machine: in winch dyeing the fabric is wholly immersed in the dye liquor about 99% of the dyeing period while in jig dyeing the fabric is wound on a draw roller out of the liquor about 10-15 min. for each passage through the dye liquor of about 2-3 sec. duration. TTD:5-46.

DYEING MIXED FIBERS. Solving the problem of dyeing mixed fibers. L. S. Thompson, Gen. Dyestuff Corp. *Cotton* (Atlanta) *110,* No. 2, 95-8 (Feb. 1946).

Dyeing of mixtures of rayon, cotton, wool, and other fibers with direct, developed and vat colors is considered. TTD:5-46.

DYEING RAYON. Dye occlusion in acetate rayon dyeing. Anon. *Dyer 95,* 133, 135, 143 (Feb. 1, 1946).

Fiber coloring, or stain, caused by dye occlusion within yarns and fabrics is discussed. Dye occlusion occurs in acetate rayon materials particularly those containing cotton or wool. It is suggested that this stain is due to fiber surface roughness and that use of as long a dye liquor as possible will help in reducing it. TTD:5-46.

DYEING WOOL. Modern methods of wool and union dyeing. Daniel McGowan, Nat'l. Aniline & Chemical Co. *Can. Textile J. 63,* No. 4, 39-41 (Feb. 22, 1946).

Practical problems concerned with dyeing wool and wool blends are considered. Suggestions for preparing dyeing formulas are given. TTD:5-46.

NYLON DYEING. Anon. *Chem. Preview 9,* No. 1, 44-5 (Jan., Feb. 1946).

Package dyeing of nylon yarn (i. e. in cake form, without unwinding) is assisted by a dye-carrying penetrant, Victawet 12. TTD:5-46.

NYLON DYES. Anon. *Knitter 10,* No. 2, 48 (Feb. 1946).

A new line of fugitive tints for nylon includes 7 water soluble and 4 oil soluble colors. TTD:5-46.

RAYON DYEING. Application of vat dyes to viscose rayon. I-Hank dyeing, S. Burgess *J. Soc. Dyers Colourists 62,* 42-4 (Feb. 1946).

Strike index classification of weak and strong alkali vat dyes are tabulated and discussed. Indigosol and Soledon dyes are also classified according to rate of dyeing, temperature, and dye depth. The cold dyeing process is not considered suitable for viscose rayon. TTD:5-46.

RAYON DYEING. Application of vat dyes to viscose rayon. II-Cake dyeing, A. B. Cox. *J. Soc. Dyers Colourists 62,* 44-7 (Feb. 1946).

Even pigmenting of the viscose rayon cake with a highly dispersed vat dye, which eliminates concentration of leuco-compound in the circulating liquor, is the basis of a new padding process. TTD:5-46.

VAT DYEING. New developments in vat dyeing. Anon. *Rayon Textile Monthly 27,* 97 (Feb. 1946).

A tabulated classification of dyes is given. LWR TTD:5-46.

WOOL DYEING. Recent advances in wool dyeing. Relation of dyeing properties to dyestuff constitution. F. Townend & G. G. Simpson, Imperial Chemical Industries, Ltd. *J. Soc. Dyers Colourists 62,* 47-52 (Feb. 1946).

Wool dyeing problems are investigated. Dye selection is largely governed by the shade to be dyed, fastness requirements, and the dyer's experience. Choice of satisfactory dyes is closely connected with the chemical constitution of the dyes and the number and nature of their acidic groups. TTD:5-46.

VAT DYEING. Glenn F. Womble (Riverside & Dan River Cotton Mills, Inc.). USP 2 396 908, Mar. 19, 1946.

A continuous vat dyeing process that improves over the

straight jig, pigment-pad jig, and other continuous vat dyeing processes, consists in applying water-dispersed pigment, fixing and reducing it all in one operation. Dyeing rate is 100 yd./min. or more, and fastness is good. TTD:5-46.

DYE FASTNESS. Brit. Celanese, Ltd. Brit. P. 571 677. *Textile Mfr. 72,* 108 (Feb. 1946).

Dye fastness on cellulose acetate materials is improved by impregnating with a triethanolamine solution containing an organic swelling agent. TTD:5-46.

JUTE DYEING. C. Garrett (to Lumsden & Mackenzie, Ltd.). Brit. P. 571 799. *Textile Mfr. 72,* 110 (Feb. 1946).

Good dyeing results are obtained on jute (with naphthol or brenthol dyes) after dry cleaning the jute with petroleum benzine, scouring with soda ash and soap, and bleaching with alkaline hypochlorite, peroxide, or other bleaching agent. TTD:5-46.

DYEING RAYON. Edmund Stanley, Christopher S. Argyle, & Henry C. Olpin; Alexander J. Wesson (to Henry Dreyfus). Can. P. 433 472-3, Mar. 5, 1946.

Cellulose acetate fibers, foils, films, etc., are dyed in a solution of a 1:4-di(arylamino)-anthraquinone. TTD:5-46.

Printing — VII 3

PIGMENT DYE developed for low grade cotton. Anon. *Rayon Textile Monthly 27,* 98 (Feb. 1946).

A new pigment dyeing process is announced by Dan River Mills which is reported to give unusual results in dyeing fabrics made of low grade cotton.
LWR TTD:5-46.

SCREEN PRINTING. R. C. Geering, Ciba Co., Inc. *Rayon Textile Monthly 27,* 89-94 (Feb. 1946).

The advantages and disadvantages of screen printing are discussed. Colors and methods are given for printing silk, wool, rayons, and cotton by application printing and discharge printing.
LWR TTD:5-46.

PRINTING. Harry Fleisher & Geo. H. Tillett (to Rotomatic Screen Printer, Ltd.). Re 22 722, Feb. 19, 1946 (USP 2 321 134, June 8, 1943).

An improved stencil printing screen prints color designs on fabric. TTD:5-46.

PIGMENT PRINTING. David N. Gans (to Interchemical Corp.). USP 2 394 542-3, Feb. 12, 1946.

A printing paste dispersed in a synthetic rubber solution (from copolymerization of butadiene and acrylonitrile) compounded with vulcanizing agents yields a wash-fast print on fabric with desirable hand and little crocking. Example (%): Perbunan, 8; ZnO, 0.4; S, 0.16; Captax (mercaptobenzothiazole), 0.08; Tuads (tetramethyl thiuram disulfide), 0.02; Solvesso

No. 2 (hydrogenated petroleum naphtha), 64.34; yellow toner, 11.98; H_2O, 15.02. In another example polychloroprene is the pigment binder. TTD:5-46.

PRINTING PASTE. Emil G. Wiest (to E. I. du-Pont de Nemours & Co.). USP 2 396 357, Mar. 12, 1946.

In dye printing with an azo dye, speed of regeneration of the stabilizer is increased and cloth deterioration thereby decreased (because of a shorter period of exposure to acid). Example of a printing paste (%): diazo base and stabilizer (6-sulfotetrahydroquinoline-8-carboxylic acid), 1.63; m-nitroanilide of 2 hydroxynaphthoic acid, 1.07; NaOH, 3.0; H_2O, 25.3; starch-tragacanth gum, 70.0. TTD:5-46.

FLOCK PRINTING. Chas. L. Mantell (to United Merchants & Mfrs., Inc.). Can. P. 433 460, Mar. 5, 1946.

Flock printing of a fabric consists in applying flock to material coated with an alkyd resin, which is then heat-set. TTD:5-46.

Color measurement — VII 4

COLOR AND HEAT. Colors of clothing and heat absorption. Waldemar Schweisheimer. *Indian Textile J. 56,* 439-40 (Feb. 1946).

The capacity of clothing materials for reflecting and absorbing heat and the effect of these factors on the wearers are discussed. A table of heat absorption values for various colors from white to black (with black measuring 208 on the basis of white at 100) is included. TTD:5-46.

COLOR MEASUREMENT. Determinations and calculations of physical constants of water suspensions of pigments. W. V. Torrey, S. D. Warren Co. *Paper Trade J. 122,* No. 7, 53-4 (Feb. 14, 1946).

Using $CaCO_3$ suspension as an example, calculations and curves indicate a method for determining physical constants of any pigment suspension. TTD:5-46.

MEASUREMENT OF COLOR. W. D. Wright, Imperial College of Science. *Rayon Textile Monthly 27,* 93-6 (Mar. 1946).

The tri-stimulus (trichromatic) system of color measurement and its adaptation to writing color specifications is discussed.
HAM TTD:5-46.

NEW COLOR CARDS. Anon. *Dyer 95,* 124-6 (Feb. 1, 1946).

New dyes are described. TTD:5-46.

STANDARD COLOR CARDS. Anon. *Tech. News Bull. Natl. Bur. Standards* No. 347, 17-18 (Mar. 1946).

Color standardization aids coöperation among the tex-

tile manufacturer, dyer and dye producer and insures a standard color name for the same color.
TTD:5-46.

Color defects — VII 5

DYEING PROBLEMS that originate outside the dye house. Anon. *Silk & Rayon 20,* 358, 361 (Mar. 1946).

Many dyeing variations are caused by faults in spinning and weaving, some of which are briefly discussed.
TTD:5-46.

PROOFING — VIII

RESEARCH ON WOOL TEXTILES. Anon. *Can. Textile J. 63,* No. 4, 43 (Feb. 22, 1946).

Research on wool will make practical washable shrinkproof woolen textiles that are more water repellent and crease resistant. TTD:5-46.

WEATHERPROOFING. Quartermaster fights weather. Wm. M. Lee, Office of QMG. *Am. Dyestuff Reptr. 35,* 72-6 (Feb. 11, 1946).

The effects of weather (temperature, humidity, light, wind, rain, snow and ice) on all the wide variety of fabrics used by the Army are discussed, with particular reference to tests at Camp Lee. TTD:5-46.

Waterproofing — VIII 1

CELLULOSIC FILMS. Jno. D. Pollard (to Am. Cyanamid Co.). USP 2 394 009, Feb. 5, 1946.

A nonfibrous cellulosic film is made water-repellent by impregnating it with an acidic aqueous solution containing 0.5-20 wt. % melamine formaldehyde condensation product. TTD:5-46.

MOISTUREPROOFING. Marathon Paper Mills Co. Australian P. 120 591. *Textile J. Australia 20,* 582 (Feb. 1946).

A moistureproofing composition, heat sealed in the fabric, consists of a microcrystalline wax and a metallic soap dispersed in the wax. TTD:5-46.

WATERPROOFING CELLULOSE FIBERS. J. R. Geigy A-G. Brit. P. 571 919. *Textile Mfr. 72,* 111 (Feb. 1946).

Cellulose fibers are waterproofed by treatment with acid solutions of urea and guanidine compounds and formaldehyde. TTD:5-46.

Rotproofing — VIII 3

ACETYLATED COTTON highly resistant to rotting. Chas. F. Goldthwait, Jas. McLaren & Samuel T. Voorhies, Jr. Southern Regional Research Laboratory, USDA. *Textile World 96,* No. 2, 115-17, 212, 216 (Feb. 1946).

Partial acetylation on fiber, yarn, thread, and fabric gives protection against microbiological attack. Test

results are tabulated. The acetylation process is rather difficult and relatively expensive; an uncertain factor such as recovery of chemicals complicates close cost estimate. TTD:5-46.

FUNGICIDES in war and peace. Henry N. Mitchell, Signal Corps Engineering Research and Development Laboratories. *Textile Colorist 68,* No. 2, 14-15, 54, No. 3, 22-3, 47 (Feb., Mar. 1946).

Research and developments in fungicides, resulting from their wartime use on textiles, are surveyed. Tests to which fungus-proofed fabrics were submitted at Fort Monmouth are described in some detail and include: water immersion, tensile strength, water absorption, hydrostatic, low and high temperature, wet heat, abrasion resistance, weatherometer, toxicity and skin irritation, and fungus resistance. TTD:5-46.

MILDEWPROOFING. New fungicide for textile sizing: Binol A. S. Anon. *Indian Textile J. 56,* 427 (Feb. 1946).

Binol A. S., a new and efficient fungicide, available in cakes, inhibits mildew growth on textiles.
TTD:5-46.

ROTPROOFING. Compound G-4 advanced as fiber proofing agent. Anon. *Textile Bull. 69,* No. 12, 60 (Feb. 15, 1946).

Givaudan-Delawanna's Compound G-4 is a rotproofing agent for awnings, tenting, and other fabrics.
TTD:5-46.

TEXTILE FUNGICIDE. Chem. & Met. Eng. 53, No. 5, 170 (May, 1946).

Monsanto Chemical Co. announces the development of formulations containing Cu 8-quinolinolate as textile fungicides. They impart a light-stable greenish-yellow shade to the goods.
LCL TTD:5-46.

MILDEWPROOFING FABRIC. Roxalin Flexible Finishes, Inc. Brit. P. 572 165, 572 196. *Textile Mfr. 72,* 112 (Feb. 1946).

A Cu, Zn, or Hg salt solution applied to a fabric imparts mildewproofing qualities to it. TTD:5-46.

IMPREGNATION. Swed. P. 116 158. L. Aasheim, Dec. 31, 1941. *Svensk Papperstidning 49,* 181 (Apr. 30, 1946).

Mildewproofing agents for textiles and wood preservatives are applied by a two bath system in which the first bath contains a hydrated metal salt and the second bath contains a soap solution. The soap solution includes soaps of wood tar fatty acids in aqueous emulsion. The metal salts entrained from the first bath convert these soaps to difficultly soluble metal soaps which are thereby precipitated on and in the fibers of the material. TTD:5-46.

Flameproofing **VIII 4**

FLAMEPROOF FINISH. Bancroft's new "Ban Flame" finish for fabrics. Anon. *Rayon Textile Monthly 27,* 84 (Feb. 1946).

A war-developed flameproofing finish, that adds less than 20% to fabric weight, is announced.
LWR TTD:5-46.

MANUFACTURE OF VINYL CHLORIDE AND POLYVINYL CHLORIDE. I. G. Farbenindustrie. Combined Intelligence Objectives Sub-Committee Report XXVII-51; price 7d.

Listed in *Govt. Publications (Great Britain)* (Feb. 1946). TTD:5-46.

Shrinkproofing **VIII 6**

SHRINKAGE—What we are doing about it. D. H. Powers. *Rayon Textile Monthly 27,* 97-9 (Mar. 1946).

Cotton and rayon fabrics treated with melamine resins show low shrinkage after laundering with superior muss and crease resistance and a much smaller shrinkage in processing (mechanical shrinking) than similar untreated fabrics. Data given show effect of various resin concentrations on shrinkage characteristics of fabrics.
HAM TTD:5-46.

SHRINKAGE CONTROL in woolen and rayon mixtures. Anon. *Rayon Textile Monthly 27,* 152 (Mar. 1946).

The Lanaset resin treatment for control of wool shrinkage gives good test results. TTD:5-46.

SHRINKPROOFING. Anti-shrink treatments for wool. Henry Phillips, Wool Industries Research Ass'n. *Textile J. Australia 20,* 566, 602-3 (Feb. 1946).

A brief general survey of the various processes includes the consideration of the economic as well as technical problems involved. TTD:5-46.

SHRINKPROOFING WOOL. A. T. Cline & F. K. Signaigo (to E. I. duPont de Nemours & Co.). Brit. P. 572 041. *Textile Mfr. 72,* 111 (Feb. 1946).

A process for shrinkproofing wool and making it resistant to alkalies consists in treating with a water soluble mercapto alcohol, preferably in aqueous solution. TTD:5-46.

Stabilizing **VIII 7**

STABILIZING YARNS. E. I. duPont de Nemours & Co. Brit. P. 572 136. *Textile Mfr. 72,* 112 (Feb. 1946).

Synthetic linear polyamide yarns (e. g. nylon) are made stable to sunlight by treatment with an aldehyde and catechol resin. TTD:5-46.

TESTING AND ANALYSIS **IX**

TEXTILE TESTING IN GERMANY. Brit. Intelligence Objectives Sub-Committee Report 178; price 4s 2d.

Listed in *Govt. Publications (Great Britain)* (Feb. 1946). TTD:5-46.

Physical properties **IX 1**

BLENDS. A study of cotton blending. Simon Williams, Fabric Research Lab. & Jack D. Towery, Inst. of Textile Technology. *Textile Research J. 16,* 61-73 (Feb. 1946).

Twenty-nine different blends of two varieties of cotton, in various goods, were studied. Spinnability, yarn skein strength, yarn appearance, and manufacturing waste of the combinations were noted. The deleterious effects of off-grade cotton were offset by an increase in staple length of the blends. A range of blending much wider than is ordinarily used is economically of great advantage. Eight full-page graphs and tables.
LWR TTD:5-46.

COTTON FIBER laboratory produces results. J. H. Moore, N. C. State College. *Cotton* (Atlanta) *110,* No. 1, 92-4, 112; No. 2, 107-10 (Jan., Feb. 1946).

Fiber properties that impart strength and quality to yarn are outlined. While cotton is generally judged from grade and staple length, it is found that such characteristics as strength and fineness should be given consideration also. TTD:5-46.

COTTON TIRE CORDS. Better tires from cotton. Frank L. Teuton. *Mfrs.' Record 115,* No. 2, 48-9, 58 (Feb. 1946).

Service tests made by the Army on cotton cord tires are discussed. TTD:5-46.

LABORATORY TESTING of consumer goods. A. T. Chameroy, Sears, Roebuck & Co. *ASTM Bull.* No. 140, 23-31 (May 1946).

A general description of apparatus and methods used by a large mail-order house in testing consumer goods.
HAM TTD:5-46.

MECHANICAL PROPERTIES OF TEXTILES, IV. Richard Stein, George Halsey, Textile Research Inst. & Henry Eyring, Textile Foundation. *Textile Research J. 16,* 53-60 (Feb. 1946).

An extension of the work reported in previous papers on correlation of the physical properties of fibers to a simple mechanical model. Good correlation is reported between stress-strain behavior of rayon and the model over several cycles.
LWR TTD:5-46.

TENSILE STRENGTH in vulcanized rubber. J. C. Williams, Mellon Inst. of Ind. Research. *India Rubber World 113,* 805-7 (Mar. 1946).

The effect of the number of C atoms or chain length per unit weight of rubber molecule on the tensile strength of a vulcanized rubber is considered. A degree of correlation between actual and calculated values was observed. Buna-S and Buna-N rubbers do not correspond to the calculated values if 1, 4-addition is assumed; 1, 2-addition gives better correlation.

LWR TTD:5-46.

TESTING. Modern instruments and methods for testing yarns or fabrics. H. Marsden. *Textile Mfr. 72,* 75-7 (Feb. 1946).

The constant and uniform rate of applying load to a test specimen is the most accurate test for fatigue, tensile strength, elongation, etc. Four testers (2 serigraph and 2 tensilgraphs) are illustrated.

TTD:5-46.

YARN ANALYSIS. Cotton yarn and thread strength. John Duerst, Clark Thread Co. *Cotton* (Atlanta) *110,* No. 2, 105-6 (Feb. 1946).

Yarn breakage strength is of 3 types: absolute, maximum, practical; the last 2 constitute the actual strength. Four factors in yarn strength are: individual fiber lengths, fiber surface frictional strength, number of fibers per cross section, and degree of intertwining force recorded. Formulas for calculating yarn strength are given. TTD:5-46.

TESTING FIBER FELTING. J. E. P. Furness. Brit. P. 571 795. *Textile Mfr. 72,* 109-10 (Feb. 1946).

A testing device prepares a sample felt to test the felting properties of fibers. TTD:5-46.

MEASUREMENT OF IMPORTANT PHYSICAL CHARACTERS OF JUTE FIBER STRANDS AND THEIR RELATION TO YARN QUALITY. Indian Central Jute Committee Technological Research Memoir No. 7; 1944; price 0-14-0 rupees.

Reviewed in *Indian Textile J. 56,* 477 (Feb. 1946). TTD:5-46.

Chemical analysis IX 2

CELLULOSE ACETATE. Light scattering investigation of cellulose acetate. R. S. Stein & Paul Doty. *J. Am. Chem. Soc. 68,* 159-67 (Feb. 1946).

The molecular weights (MW) of a series of cellulose acetate fractions were determined by the method of light scattering. An instrument for measuring absolute turbidity is described, as is also an instrument for measuring the angular intensity distribution of scattered light. The data indicate that in acetone solution cellulose acetate molecules are rather extended up to MW about 80,000. At higher MW the molecule may coil back on itself to a degree that increases rapidly with MW. TTD:5-46.

FIBER ANALYSIS. T. E. Waenerlund, C. G. Carlsson & K. S. O. Ulfsparre (to Mo och Domsjö A/B). Swed. P. Appl. 2961/1943. *Svensk Papperstidning 49,* 179 (Apr. 30, 1946).

An improved arrangement of sieves for fractionating fibers or like materials. TTD:5-46.

MOISTURE ADSORPTION of textile yarns at low temperatures. Robt. C. Darling & Harwood S. Belding, Harvard University. *Ind. Eng. Chem. 38,* 524-9 (May, 1946).

The moisture adsorption of wool, cotton, cellulose acetate, and viscose rayon yarns was measured at 40°, 0°, and—20°F. and at several relative humidities above 50%. The equilibrium values obtained, together with similar values at higher temperatures in the literature, indicate that at constant relative humidity there is a high point between 0° and 40°F., and that less water is bound at lower as well as higher temperatures. The significance of this finding in terms of possible changes of heat of adsorption is discussed. Curves of the rate of water adsorption of the yarns are also presented, from which the overall temperature coefficient of the process is derived.

WPU TTD:5-46.

NEUTRALIZATION OF WOOLENS. Anon. *Wool Record & Textile World 69,* 465, 467, 469 (Feb. 28, 1946).

The neutralization of acid remaining in wool after such processes as carbonizing, dyeing, etc., it is discussed under 2 heads: removal by washing with water only and removal by means of alkali. That wool is not an inert carrier of either acid or alkali but has within the molecule both acid and basic groups is an important factor in neutralizing. TTD:5-46.

SHRINKAGE PHENOMENA on cellulose films. R. Prince & J. Seiberlich, Univ. of New Hampshire. *J. Phys. Chem. 50,* 222-35 (May, 1946).

From experiments on viscose foil from bleached cotton linters the relationship between shrinkage patterns of cellulose films and birefringence is studied. Films containing water or solvents show slight birefringence. The patterns appear to be the resultants of shrinkage stresses as the films show no stress patterns in transmitted polarized light. TTD:5-46.

TESTING of yarns and fabrics. N. Eyre. *Textile Mfr. 72,* 68-70 (Feb. 1946).

Methods for quantitative and chemical analysis of fiber mixtures in yarns and fabrics and also for determination of moisture content are indicated.

TTD:5-46.

VISCOMETRY. Rapid method for determining cuprammonium viscosity. Committee on Analysis, Cellulosaindustriens Centrallaboratoriums. *Svensk Papperstidning 49,* 148-53 (Apr. 15, 1946); Summary in German, 154-5; in English, 155-6.

Accepted in 1944 as CCA 16, this method is an improvement over CCA 13, which in turn was essentially

the TAPPI method. Time is saved by pretreating the sample with ammonia to accelerate solution of cellulose. Dissolving time is thus shortened from about 15 hours to 10 minutes or less. The method is recommended especially for pulps with viscosity below 40 centipoises. For high viscosity pulps there may be some degradation of the cellulose in this method.

TTD:5-46.

VISCOSE. Factors influencing filtration of viscose. Risto Vuori, A. B. Centrallaboratorium. *Svensk Papperstidning 49,* 95-6 (Mar. 15, 1946).

Tests with NaCl 1.15, CaO 0.1, Na silicate 5.5, Na_2CO_3 3.0 tall oil resin 0.5, hemicellulose up to 1.9, and mixed sea water salts 0.046% indicated that these extraneous additions to the mercerizing lye in making viscose have no significant effect on the filtering properties of viscose. Apparently the principal factor in filtration behavior is the uniformity of degree of polymerization (DP). Clogging of filters appears to be caused by unusually long molecular chains, for example the average DP of the viscose in a factory operation was 248, whereas the average of the slime removed from clogged filters was 554. Further study is needed to ascertain whether the influence is exerted directly or indirectly.

TTD:5-46.

Specifications IX 4

STATISTICAL TEXTILE RESEARCH. Anon. *Ambassador 1946,* No. 3, 116.

A brief discussion. TTD:5-46.

WASTES X

TEXTILE WASTE—WHAT SOLUTION? Anon. *Sewage Works Eng. 17,* 16-17 (Jan. 1946).

Some aspects of the problem are considered (condensed from Textile Foundation, Inc.'s *Textile Waste Treatment and Recovery*). The ill effects of discharging textile waste into city sewer systems are discussed. Damaging and clogging of sewer pipes is a serious matter. Suggested solutions include: preliminary treatment to reduce pollution of industrial waste, planned programs of discharge so that acid wastes from one industry will neutralize alkaline wastes from another, equalization and proportioning of flow at the mill without preliminary purification. TTD:5-46.

HAZARDS XII

FIRES. Handling methods affect picker room fires. W. E. Peterson. *Textile World 96,* No. 2, 129, 131, 220, 224 (Feb. 1946).

A survey by the Factory Mutual Fire Insurance Companies of 212 southern cotton mills shows that more fires originate in the opener room than in any other department, that they spread swiftly to the picker room, and that they are generally confined to machinery and cotton. Diversion sections below condensers (to allow burning cotton to be worked out) are suggested.

It is shown that garnetting all sliver waste appreciably reduces fire loss. Three-shift operations more than double fire loss. TTD:5-46.

OCCUPATIONAL FATIGUE. Causes of fatigue in textile industries. Anon. *Silk & Rayon 20,* 221 (Feb. 1946).

After observation of the work habits of wool, silk and cotton workers it is found that additional study should be given to such factors that cause fatigue as monotony, long hours, lack of sleep, poor lighting, etc.

TTD:5-46.

OILS. Non-cancerous mule spindle oils. C. C. & J. M. Twort. *Textile Weekly 37,* 376 (Feb. 22, 1946).

Carcinogenicity (cancerous producing power) of mineral lubricating oils for mule spindles is discussed, with particular reference to a specification which was to prevent the use of the worst types of cancer-producing oils. It is emphasized that the only mule spindle oils of mineral origin which can be called non-cancerous are those devoid of color generally known as white oils.

TTD:5-46.

TEXTILE MILLS XIII

Mill buildings XIII 1

INSTRUMENTATION and plant design. F. H. Trapnell, E. I. duPont de Nemours & Co. *Instruments 19,* 264-71 (May, 1946).

Any new industrial construction which contemplates the use of instruments for measurement, control, or both, should be planned by coordination of instrumentation with all other construction factors. Applications of hand control, automatic control, and centralized control should be carefully considered. This preliminary study is economically valuable.

LCL TTD:5-46.

PILOT PLANT. Planning a pilot plant for spinning blended yarns. Bill McComb. *Rayon Textile Monthly 27,* 73-5 (Mar. 1946).

Some features necessary for the construction of a 1,000 spindle pilot plant are described. Lack of a really efficient picker for staple synthetics is noted.

HAM TTD:5-46.

RAYON PLANT. Prerequisites in establishing a viscose rayon plant. Paul W. Frisk. *Rayon Textile Monthly 27,* 73-5 (Feb. 1946).

The relationships between floor space and production of rayon are given. The elements to be considered in a choice of location are: topography, climate, water supply, waste disposal, transportation, and labor supply.

LWR TTD:5-46.

TEXTILE ENGINEERING. Study of mills—greater return. John A. McPherson, McPherson Co. *Daily News Record* No. 111, 44 (May 13, 1946).

Existing plants must suffice for some time in the textile industry. Suggestions for the fullest utilization

(and if necessary, modernization) of these facilities are given. TTD:5-46.

LEHRSPINNEREI (MODEL SPINNING MILL) DENKENDORF. Brit. Intelligence Objectives Sub-Committee Report 88; price 3s 2d.

Listed in *Govt. Publications (Great Britain)* (Feb. 1946). TTD:5-46.

Mill machinery — XIII 2

DETEL CHLORINATED RUBBER. David Brownlie. *Textile J. Australia 20,* 582 (Feb. 1946).

Iron and steel are protected from corrosion, such as may be caused in laundry, textile, and dyework industries, by painting with Detel, a chlorinated rubber. It is a tenacious, nonflammable, nonpoisonous film which, because of its resistance to corrosion, may be used also as a marking ink for clothes and other fabrics. TTD:5-46.

ELECTRIC DRIVE. Coördinated electric drive for a rubber calender train. K. W. John, G. W. Knapp & W. A. Mosteller. *Elec. Eng. 65,* T128-34 (Mar. 1946).

A coördinated electric drive has been developed for calenders and auxiliary machinery used in the process of coating fabrics with rubber. Particular application is in tire manufacturing. New equipment utilizes sectionalized motor drives controlled and coördinated by circuits. Application to the textile industry is indicated.
TWH TTD:5-46.

MILL MACHINERY. Radicon gear drive. Anon. *Textile Weekly 37,* 386 (Feb. 22, 1946).

Synchronous speeds for swifts on cards and under-floor shaft drives are dealt with. A photograph illustrates an under-floor shaft drive on a wool carding machine which uses the Radicon gear. TTD:5-46.

MOTOR CHECKS warn of impending failures. Comer Turley, Pepperell Mfg. Co. *Textile World 96,* No. 2, 123, 125, 204, 212 (Feb. 1946).

Constant inspection of electrical equipment is necessary for efficient operation. Shut-downs of electrical equipment can be prevented by constant inspection. TTD:5-46.

SPINDLE LUBRICATION. Anon. *Saco-Lowell Bull. 18,* No. 1, 13-18 (Mar. 1946).

Directions for oiling are given. TTD:5-46.

SPINNING MACHINERY. Planning the construction of your postwar mill. Jas. Osborne. *Textile Age 10,* No. 2, 72, 74-6, 80, 82 (Feb. 1946).

A discussion of the various drafting systems available for spinning includes the Casa Blanca, the H & B (a 4 roll system suitable for cotton or synthetics), the Whitin system and the Saco-Lowell (of which there are 3 types). TTD:5-46.

TEXTILE MACHINES. Zellweger shows textile machines at Industry's fair. Anon. *Daily News Record* No. 111, 11 (May 13, 1946).

At the Swiss Industry's Fair there were exhibited 4 Zellweger machines: (1) an automatic warp tying machine, (2) automatic drawing-in machine (Turicum), (3) denting machine, and (4) Gentsch warp leasing machine. TTD:5-46.

Mill power — XIII 3

ELECTRIC DRIVING of textile factories. IX. Special applications and individual motor drives. E. Howlett. *Textile Mfr. 72,* 78-82, 87 (Feb. 1946).

Electric driving of textile machinery is discussed, particularly as applied to looms, slashers, batching machines, stentering and drying ranges, and dye jiggers. Sectional and individual drives are considered. TTD:5-46.

ELECTRIC POWER. Short-circuits need speedy interruption. D. L. Beeman, Gen. Electric Co. *Textile World 96,* No. 2, 155, 227-8, 232 (Feb. 1946).

Suggested means of guarding against short-circuits are given. TTD:5-46.

HIGH TEST PEROXIDE. Anon. *Ind. Bull. A. D. Little, Inc.,* No. 220 (April, 1946). *Chem. & Met. Eng. 53,* No. 5, 141 (May, 1946).

Hydrogen peroxide is now available in concentrations up to 90%, instead of the previous 35% maximum, from the Buffalo Electro-Chemical Co., Inc. It has many new properties and requires careful handling.
LCL TTD:5-46.

MECHANICAL HANDLING OF COAL cuts dust and labor in 2 mills. George Ransom. *Textile Age 10,* No. 2 56, 58-60, 62 (Feb. 1946).

From experiences in 2 mills, mechanization of the boiler plant of the textile mill contributes to reduction in dust and in labor costs. Photographs and a diagram illustrate a typical installation. TTD:5-46.

POWER TRANSMISSION in mills. A survey of systems and media. W. A. Kenyon, Wm. Kenyon & Sons, Ltd. *Textile Weekly 37,* 226, 228, 230, 272, 274, 276, 326, 328, 330 (Feb. 1, 8, 15, 1946).

A lecture, in which the K. V. rope is discussed in considerable detail. TTD:5-46.

SAVING STEAM in dyeworks. Edw. Ingham. *Dyer 95,* 183-5 (Feb. 15, 1946).

Suggestions for saving steam include checking for leaks, attention to lagging, blowing of safety valves, etc. TTD:5-46.

Atmospheric control — XIII 6

MILL HEATING. A modern heating system for textile mills. G. Lorne Wiggs, G. Lorne Wiggs & Co. *Can. Textile J. 63,* No. 4, 42-3 (Feb. 22, 1946).

The advantages of radiant heating for textile mills are considered and suggestions for installation are given. TTD:5-46.

VENTILATING. Practical methods used for dust disposal. C. C. Hermann. ***Chem. & Met. Eng.*** *53,* No. 5, 136-8 (May, 1946).

Dust disposal may be by salvage, burning, or storing. Each method must be considered for any particular application. There are several working systems available.

LCL TTD:5-46.

VAPOR ADSORPTION. Edw. Ledoux. Chemical Publishing Co., Inc. Brooklyn, N. Y.; 1945; 354 pp.; price $8.50.

Reviewed in *Textile World 96,* No. 2, 174 (Feb. 1946. TTD:5-46.

Process control **XIII 7**

BOILER INCRUSTATION. Anon. *Silicate P's & Q's 26,* No. 6 (1946).

The use of soluble silicates in cleaning boilers of deposits is discussed. TTD:5-46.

MACHINERY MAINTENANCE. Systematic examination and maintenance of equipment important to production. Anon. *Rayon Textile Monthly 27,* 156-7 (Mar. 1946).

A system of periodic checkups is important in maintenance of machinery in the textile mills.

TTD:5-46.

pH CONTROL. Measurement and control of pH. D. M. Considine. *Instrumentation 2,* No. 2, 7-10 (May-June 1946).

Bleaching, sizing, and dyeing are a few of the many chemical operations mentioned as affected by pH control. The colorimetric and the electrometric methods are the 2 basic ways of measuring pH. The electrometric method, the more recent of the 2, is discussed. Five disadvantages in the colorimetric method are listed, among which is mentioned the difficulty of use in colored or opaque solutions. The pH scale and buffer solutions are discussed. Four electrodes for measuring pH are briefly described: (1) hydrogen, (2) quinhydrone, (3) antimony, and (4) glass.

TTD:5-46.

BASIC SCIENCES **XIV**

CELLULOSE CHEMISTRY. Fractionation of cellulose. O. A. Battista & Wayne A. Sisson, Am. Viscose Corp. *J. Am. Chem. Soc. 68,* 195 (Mar. 1946).

In attempting to fractionate cellulose in the form of experimental rayon tire cord from its solutions in cuprammonium hydroxide, it was found that the proper resolution into fractions of progressively decreasing molecular weight (MW) depends to a very great extent on the proper choice of precipitating agents. While acetone and n-propyl alcohol were satisfactory, a 5% aqueous solution of Rochelle salt was not, i. e. all the fractions obtained by its use had about the same MW. The same general phenomena have been reported for

cellulose acetate and acetate-butyrate by Morey and Tamblyn (*J. Phys. Chem. 50,* 12-22 (1946).)

ALN TTD:5-46.

ELECTRONICS FOR TEXTILES. Textile industry making use of electronics. Henry Miedendorp, Jr. *Rayon Textile Monthly 27,* 153-5 (Mar. 1946).

Electronic tubes have varied uses in the textile industry: process control (temperature, pressure, liquid, etc.); twist setting of nylon, rayon, and other yarns; and the drying of textiles. TTD:5-46.

EMULSIONS. Fatty acid soaps in emulsion polymerization. Leo W. Rainard, Inst. of Textile Technology. *India Rubber World 114,* P67-9 (Apr. 1946).

A correlation has been observed between the oxidation potential and the polymerization rate of an emulsion polymerization system. In butadiene systems the overall polymerization rates are not proportional to the square root of the catalyst concentration and generally exhibit maxima with respect to increased catalyst concentration. The role of fatty acid soaps in emulsion polymerization has been described tentatively, partly on the basis of a chemical interaction between soap and peroxides.

LWR TTD:5-46.

HIGH POLYMERS—A new field of science. Anon. *Tech. News Bull. Natl. Bur. Standards* No. 346, 9-10 (Feb. 1946).

Fundamental research on rubber, textiles, paper, leather, plastics, etc., is being integrated by application of methods and techniques of the science of high polymers. TTD:5-46.

STARCH CHEMISTRY. Nitration of starches with nitrogen pentoxide in presence of sodium fluoride. G. V. Caesar & Max Goldfrank, Stein, Hall & Co., Inc. *J. Am. Chem. Soc. 68,* 372-5 (Mar. 1946).

Nitric acid esters, believed to reflect the degree of polymerization of the original starch, were made by nitrating starches from various sources with N_2O_5 in the presence of NaF. The method is thought to be capable of fairly wide application in the study of polysaccharides.

ALN TTD:5-46.

AN INTRODUCTION TO THE CHEMISTRY OF CELLULOSE. J. T. Marsh & F. C. Wood, Chapman & Hall, London; ed. 3; 1945; price 32s.

Reviewed in *Cotton* (Manchester) *51,* No. 2493, 6 (Feb. 9, 1946). TTD:5-46.

PHYSICAL METHODS OF ORGANIC CHEMISTRY. (I) Arnold Weissberger, Ed. Interscience Publishers, New York City, 1945; 743 pp.; price $8.50.

Reviewed in *Science 103,* 285 (Mar. 1, 1946).

TTD:5-46.

TEXTILE RESEARCH XV

CONCERNING TEXTILE RESEARCH. Edw. R. Schwartz, Mass. Inst. of Technology. *Am. Dyestuff Reptr. 35,* 107-10 (Feb. 25, 1946).

A lecture considers the future of textile research after assessing its value in the past. Eight photomicrographs. TTD:5-46.

CONSUMER'S VIEWS on textile research. Lew Hahn, Nat'l. Retail Dry Goods Ass'n. *Am. Dyestuff Reptr. 35,* 94-5 (Feb. 25, 1946).

A lecture discusses the consumer's feelings on research. TTD:5-46.

COTTON needs more research to meet competition. Geo. A. Sloan. *Am. Wool Cotton Reptr. 60,* No. 7, 35, 41, 43 (Feb. 14, 1946).

A lecture. TTD:5-46.

DEVELOPMENTS IN TEXTILES in 1945. Milton Harris & Gypsy Frankenberg, Milton Harris Associates. *Chem. Eng. News 24,* 327-9 (Feb. 10, 1946).

A brief survey. TTD:5-46.

FABRIC FORECAST. Leone A. Heuer, Household Finance Corp. *J. Home Econ. 38,* 74-8 (Feb. 1946).

A general survey of the textile field includes brief discussions of natural fibers, shrinkproofing processes in wool, luster finishes of cotton, linen outlook, man-made fibers, rayon, Aralac, Fiberglas, nylon, Vinyon, Velon, Saran, and plastic coated yarns. TTD:5-46.

FUTURE OF INDUSTRIAL TEXTILE RESEARCH. Milton Harris. *Am. Dyestuff Reptr. 35,* 103-6 (Feb. 25, 1946).

A lecture. TTD:5-46.

INTERPRETING TEXTILES. Business man, technologist, and consumer. Anon. *Wool Record & Textile World 69,* 397, 399-400 (Feb. 21, 1946).

It is suggested to the business man and the textile technologist that they make the public more familiar with the field of wool and cotton manufacture. TTD:5-46.

TEXTILE DESIGNING. Missing link in textile designing. Antony Hunt, Brit. Foreign Office. *Textile Bull. 69,* No. 11, 12, 14 (Feb. 1, 1946).

A specialist design director, to interpret and present the textile art to the public, is felt to be the need of the textile manufacturer today. TTD:5-46.

TEXTILE RESEARCH. Work of research laboratory to influence future of textiles. Anon. *Daily News Record* No. 111, 48 (May 13, 1946).

The value of research to the future of textiles is exemplified by Callaway Institute. TTD:5-46.

TEXTILE RESEARCH. Need for the scientific approach in cotton textile industry. W. A. Grierson, Greenhalgh & Shaw, Ltd. *Textile Mfr. 72,* 59-61 (Feb. 1946).

A lecture. TTD:5-46.

COTTON RESEARCH FOR TEXAS. R. C. Goodwin. Chemurgic Papers Series 2, No. 436; Nat'l. Farm Chemurgic Council, Columbus, O.; 1946; 6 pp. TTD:5-46.

FOUR REGIONAL RESEARCH LABORATORIES. Carl F. Speh. Chemurgic Series 3, No. 451; Nat'l. Farm Chemurgic Council, Columbus, O.; 1946; 7 pp. TTD:5-46.

ROLE OF CHEMISTRY IN DEVELOPMENT OF TEXTILES. Booklet of Burkart-Schier Chemical Co., Chattanooga, Tenn.

Reviewed in *Am. Wool Cotton Reptr. 60,* No. 8, 28 (Feb. 21, 1946). TTD:5-46.